

to give no surface drainage. They are the best cultivators in the district, frugal and hard-working, and few of them are poor. They hold as *gaoutiās* more villages than any other one caste in the district, and Kultā tenants are usually well-to-do, having large holdings, good stock, and ample savings. Many men of this class have so profited of late years by the rise in the price of rice as to be able to buy up villages from less thrifty and industrious aboriginals. Of late years too the richer Kultās have aped Brāhman customs, even to the extent of setting up for themselves a new caste rule forbidding them to touch the plough. As a class, their most prominent characteristics are frugality, industry, hunger for land, and readiness to resort to litigation rather than relinquish a supposed right to it. These characteristics may perhaps account for two uncomplimentary proverbs about them. The first is:—*Kuliya Kultā, nishthur Teli, Bāman sānge bāt na chāli, i.e.,* a Kultā is black at heart; a Teli is cruel; a Brāhman is a dangerous companion on a journey. The second is:—*Kultā ahankāri, Bāman bhikhāri, i.e.,* the Kultā is proud and the Brāhman a beggar.

The Savarās* are a caste of aboriginal descent, who have been identified with the Suari of Pliny and the Sabarai of Ptolemy. They occupy a degraded position among the servile castes, and, like the Pāns and other very low castes, are excluded from the Jagannāth temple at Puri. They themselves say that they were originally a wandering tribe roaming through the hills of Orissa and living on the products of the forest, but in Sambalpur they now live principally in the open country and have adopted Hindu usages. They are subdivided into two sub-castes called Oriyā and Lariā, *i.e.,* residents of Orissa and the Lariā (Chhattisgarh) country. The Savarās claim also a third subdivision known as Kalāpithiā, *i.e.,* "black-backs," chiefly found in Puri, where they pull Jagannāth's car at the great car festival. The Kalāpithiās abstain from eating fowls and other food considered impure by orthodox Hindus, and are regarded as the highest class of Savarās.

There are also two curious divisions which appear to have been formed without reference to social intercourse or marriage. They are Joriā and Khuntiā, and the distinction between them is that the former bury or burn their dead near a *jor* or small stream, while the latter do so near a *khunt*, *i.e.,* an old tree on high ground. These subdivisions intermarry and eat together, and

* This caste was returned as Savarās in the Central Provinces Census of 1901, but it is reported that they are known locally as Sabarās. In Bengal the Savarās and Sabarās were treated as separate castes at the census of 1901.

differ only in having some peculiar practices characteristic of each. For instance, the Joriās consider it a great sin to marry a girl after she has attained puberty, while the Khuntias see nothing wrong in exceeding the age of puberty. The Joriās have therefore adopted the custom of marrying a girl to an arrow, if she cannot be disposed of before she attains maturity. If through some mischance she has attained maturity before being married to an arrow, she is tied to a tree in a jungle, which is a summary process of marrying her to that tree. She is finally given away as a widow to any member of the caste who will take her. Sometimes, however, such a girl is married, as an alternative, to an old man, and is then disposed of as a widow, the old man's claim to her as his wife not being recognized.

The chief deity of the Savarās is Mahalakshmi. They do not employ Brāhmans for religious or ceremonial purposes, but every one of them is said to have a Vaishnava or Bairāgi as a *guru*. They are chiefly agriculturists and field labourers. Perhaps half of them have small holdings of their own, and the others are labourers, many of whom are allowed by their masters to cultivate small plots in lieu of part of their wages. They are bad cultivators, and in the zamindāris, where some of them eke out their livelihood by collecting jungle products, they continue to follow the primitive form of cultivation called *dahi*. They are described as being stupid, honest and hard-working, and as making the best of the farm-hands. The women, less stupid and even more hard-working, do most of the rice-husking and of the huckstering at the village markets. In most villages one of them is the *jhāṅkar* or priest of the village deity, a post for which the Savarā is believed to have special qualifications. He is considered the best of sorcerers, and is therefore regarded as a dangerous person. These gifts find expression in two popular proverbs:—(1) *Savarā ki puje, Rāwat ki bāndhi, i.e.,* Who can escape if a Savarā bewitches? What cattle can run away if a Rāwat ties it up? (2) *Savarā bis gobrā, i.e.,* The Savarā is verily a cup of poison.*

Gonds.

The Gondst† are a branch of the well known tribe in the Central Provinces. In this district the Gond families are old ones, and their numbers seem to indicate that previous to the Oriyā immigration, they held possession of the country, subduing

* This account of the Savarās has been compiled mainly from a note contributed by Mr. Hirā Lāl, Extra Assistant Commissioner and Assistant Superintendent of Gazetteer, Central Provinces.

† This account of the Gonds has been compiled mainly from an article on the tribe prepared for the revised edition of the Imperial Gazetteer.

the Mundā tribes, who were probably there before them. They are of small stature and dark in colour. Their bodies are well proportioned, but their features are ugly, with a round head, distended nostrils, a wide mouth and thick lips, straight black hair and scanty beard and moustache. Their long hair is fastened in a knot behind, and is generally the only covering to the head. They are fond of hunting and pursue game with the eagerness and ardour of people of the forest. When employed in the chase they hang their arrows by the barb to their hair, with the point upwards and the feathered hilts hanging between their shoulders. When game is found, the bow is raised till the arrow points high into the air, and is then brought down to bear on its object, with an unerring aim at short distances. The Gonds are now, however, principally engaged in agriculture, and the bulk of them are farm servants and field labourers, but they include some of the leading zamīndārs and many of the *gaontias*. They work well, but are improvident and lazy when they have got enough for their immediate wants. This trait has given rise to a proverb—"A Gond considers himself a king, if he has a pot of grain in his house."

There are two main divisions, the Rāj Gonds, who form the aristocracy, and the Dhur or dust Gonds, who are the plebeians. The Rāj Gonds may be taken to be the descendants of Gond landed proprietors, who have been formed into a separate subdivision and admitted to Hinduism with the status of a cultivating caste, Brāhmins taking water from them. Many Rāj Gonds wear the sacred thread and outdo Brāhmins in their purificatory observances, even having the wood which is to cook their food washed before it is burnt. But many of them are obliged once in four or five years to visit their god Bura Deo, and to place cow's flesh to their lips wrapped in a cloth, lest evil should befall their house. The religion of the Gond is simply animistic. The deified ancestors are represented by small pebbles kept in a basket in the holiest part of the house, *i.e.*, the kitchen, where he regularly worships them at appointed intervals. His greatest god is Bura Deo, but his pantheon includes many others, some being Hindu gods and other animals or implements to which Hindu names have been attached.

The funeral ceremonies of the Gonds are interesting. The corpses are usually buried with their feet to the south; but the higher classes burn their dead. On the fifth day after death they perform the ceremony of bringing back the soul. The relations go to the river side and call aloud the name of the dead person. They then enter the river, catch a fish or an insect

and taking it home, place it among the sainted dead of the family, believing that the spirit of the dead person has in this manner been brought back to the house. In some cases it is eaten, in the belief that it will thus be born again as a child. The good souls are quickly appeased, and their veneration is confined to their descendants. But the bad ones excite a wilder interest because their evil influences may be extended to others. A similar fear attaches to the spirits of persons who have died a violent or unnatural death.

Binhāls.

The Binhāls* or Binjhawārs are a race of aboriginal descent, who appear to have been among the earliest inhabitants of the district. Their traditions associate them with the Vindhya hills, and their former home is believed to have been Ratanpur in Chhattisgarh, whence they moved eastward in the direction of Borāsāmbār. A trace of their former domination is to be found in the legend of the origin of the Mahārājās of Pātnā given in the previous chapter, and in the fact that the Binhāl zamindār of Borāsāmbār still affixes the *tikā* to the Mahārājā of Pātnā on his accession. The more advanced Binhāls, especially the land-owners, boast of an alliance with Rājputs, and call themselves Barhiās, a title originally borne by small hill chiefs; but the simpler and more ignorant Binhāls do not claim an Aryan descent.

The great majority are cultivators, and the rest are generally farm servants or field labourers. They are not such good cultivators as the Kultās and Aghariās, but are not inferior to the Gonds, and are advanced as compared with other Dravidian races. Those who have settled in the plains have taken to improved methods of rice cultivation; and in the hills and jungle tracts they have the reputation of being skilful *dah* cultivators, *i.e.*, reclaimers of jungle, and of being the hardiest of the forest races. Here they are often proprietors or managers of villages, and the majority are independent cultivators; but in the plains they are mostly farm servants, field labourers, graziers or *jhānkars*. The *jhānkars* act as assistants of the village watchmen and as priests of the village deity. The latter is represented by a stone or tree and is worshipped on festival days by the *jhānkar*, who gets a large share of the offerings, such as goats, fowls, fruit, etc. Their oldest traditions represent them as a race of archers, and in the jungle tracts they still retain their skill with the bow. They have few scruples about

* This account of the Binhāls has been compiled from a monograph prepared for the ethnographic survey of the Central Provinces by Mulla Mian Bhai Abdul Husain, formerly Subdivisional Officer of Bargarh.

food, eating pork, fowls, fish, tortoise, snakes, rats and leopards, but they do not eat monkeys, beef, crocodiles, lizards and jackals. The staple food of the poor consists of roots and the flowers of the *mahuā* tree, and they eat rice only on special occasions and on festivals. Cultivators, however, eat rice in the form of *pakhāl*. They are very fond of smoking, but will never use the *hukkā*, but only the *kāhālī*, i.e., a cheroot made of country tobacco enclosed in leaves, one of which may generally be seen in the ear or waist of every male Binjhāl.

The Binjhāls worship all the Hindu deities, but traces of a more primitive belief may be seen in their worship of arrows, swords and spears. The following appear to be purely Binjhāl deities. Bindubāshinī is an idol in the shape of a girl carved in stone, which is enshrined in a temple on the hill near Narsinghnāth. It is said that twelve Binjhāl archers, who first settled in Borāsāmbār, brought this image from Bindhyāchal, i.e., the Vindhya hills. There is a Binjhāl priest, and Binjhāls from adjacent villages visit the temple throughout the year, and offer goats, fowls, coconuts, etc. Once every three years, in the month of Phalgun, the worshippers take out the idol, and with great pomp carry it in procession round the principal Binjhāl villages, all the Binjhāl men and women, boys and girls escorting it from one village to another, dancing, singing and playing music on the way. They also present offerings to it in each village. Lakshmeswari, the goddess of archery, is enshrined in a thatched temple in *māuzā* Khairā in the Borāsāmbār zamindāri. Here six or seven three-headed spears of different size are placed, and these are worshipped by a Binjhāl, to whom the rent of 3 villages is assigned for the purpose. Dūnger Devatā is the mountain deity, and is worshipped by every Binjhāl, without exception, on Dasaharā and Chaitpunī days. This deity is represented simply by a big stone placed anywhere over a hillock or on high ground under a tree.

The Binjhāls do not employ Brāhmans in any ceremony, but almost every Binjhāl takes *karna-mantras*, i.e., *mantras* whispered in the ear (*karna*), from a Bairāgi or Vaishnava, e.g., *mantras* to be repeated in the morning at sun-rise, at the time of washing the teeth, at the time of making water, and at the time of easing. They believe firmly in ghosts or rather the spirits of the dead, for the soul of any wicked person may after death become a malevolent spirit. Their superstitious dread of spirits is phenomenal, and when any disease becomes chronic or any person is childless, they attribute it to the evil influence of one of them. On such occasions they call in a Binjhāl *guniā* or

exorcist to drive it out of the possessed person. In character, the Binjhāls of the hills are described as being straightforward and truthful, but their ideas of sin are very limited, the chief commandments of their moral code being—(a) Thou shalt not commit adultery with any one outside the caste, (b) thou shalt not steal, (c) thou shalt not give false evidence, (d) thou shalt not kill a human being, and (e) thou shalt not eat beef.

They constitute a strictly conservative caste, not admitting outsiders under any circumstances, and being extremely strict regarding any *liaison* between Binjhāl women and men of higher castes. They will not take food even from the highest Brahman, and this caste scruple was a great difficulty in the administration of relief in the famine of 1900, being removed only by engaging Binjhāl cooks.

Generally speaking, marriage takes place when the girl attains maturity, or even two or three years after menstruation commences. The marriageable age for girls varies from 16 to 20, and for the boys from 18 to 22 years. Special facilities are given to young girls on festival days to mix with the other sex, and they are allowed to make their own selection; it is seldom that a girl of marriageable age remains unbetrothed or unmarried. Child marriage was originally unknown, and is still so amongst Binjhāls in the remote hilly tracts, but has been adopted in imitation of high caste Hindus by a few families of *gaontīās*, *Barhiās* and land-owners. The latter have also resorted to the custom of marrying to arrows those girls for whom husbands cannot be found. In case the first wife is without children, a second wife is taken without hesitation, even by a common Binjhāl of ordinary means, while if the husband is a man of some means, and his first wife is unable to carry on household business unaided, a second, third or even fourth wife is taken. A zamindār marries a new wife (called a *pātrānī*) on the day he gets his powers over the zamindari, simply to commemorate the occasion, although he may have half a dozen wives already.

The marriage day is fixed by a curious method of divination. The bridegroom's father calls for the *gaint* or astrologer of the village, an elderly Binjhāl, on any auspicious day of the week except Saturday and Tuesday. At sunrise the astrologer places a bronze plate full of water in front of the bridegroom's house, and in this he puts two grains of rice and *urad*. If they sink, the sign is inauspicious, but this is avoided by selecting old light grains. Then a few grains of rice and *urad* are separately dropped into the water, and these are supposed to represent the boy and girl. If the grains come together, it is auspicious; if

they separate, it forebodes evil. The experiment is repeated thrice, and if the grains unite as many times, it means that the married life will be happy. If inauspicious signs appear, the betrothal ceremony is often postponed.

Widow marriage and divorce are allowed, and both the widows and divorced wives are as free to marry again as if they were maidens. A widow is expected to marry the younger brother of the deceased husband, the elder brother being regarded in the light of a father-in-law. She is not compelled to marry the younger brother, but she is often induced to do so, if the deceased has left any real property and no male issue; for a son by such a second marriage succeeds to the property left by the first husband. If, however, she does not consent, she is at liberty to marry some other person.

The dead are usually buried, but persons of advanced age and rich persons are generally burnt. The body is anointed with *haldi* (turmeric) and washed; new clothes are put on it, and then it is buried in a grave which is not less than three feet deep. Before burial, it is taken round the grave seven times. It is placed with the head towards the north, females being laid on the back with their face towards the sky, and males with the face downwards. If the body is burnt, the ashes and bones are generally taken to Pāñch Pandāh Dhār in the stream near Narsinghnāth, and in some cases by rich land-owners to the Ganges. On the night of the ninth day after burial, the castemen go to the house of the deceased, cook food for the family, and take some of the mourners outside the village, where they clear a piece of ground under a tree. In the centre of this they put uncooked rice, with a lamp over it and cooked rice on either side. Then they watch for an insect or fly to come up to the lamp. The insect is carefully captured on a cake of uncooked flour, brought to the house of the deceased, and kept there till next morning. Next day the son of the deceased or, in default of a son, the nearest agnate relative shaves his moustaches, and the other mourners get themselves shaved. The insect is now taken to a stream, where they worship it, putting some grains of rice over it. They then throw it in the stream or thrust it inside the sand by a tuft of grass, and having done so, bathe and return to the deceased's house and feast there. This ceremony, which is known as *kharpāni*, is not performed for children under two years of age.

The Kewats are boatmen and fishermen. They do not, as a Kewats rule, fish in tanks, but only in the rivers and chiefly in the Mahānadi. They supply the town of Sambalpur and the river-side villages with fish, and also work all the ferries, the most

important of which is the Bengal-Nāgpur Railway ferry at Sambalpur. Some of this caste hold river-side villages, but they are not the best of cultivators, and now that the railway has cut out the river as a trade route, the Kewats are losing their land. Kewat women often do business as confectioners of a kind, preparing the fried or popped rice which is used as a subsidiary meal. It is bought and eaten by men on a journey who have no time to cook food, and it is regularly given to children as an extra morning meal in the hot weather to prevent them courting some ailment by drinking water on an empty stomach.

Telis. The Telis are the oilmen of the country, but a great number have now taken to cultivation. Many Telis still are oil-pressers, who buy up sesamum and combine their caste trade with rice cultivation. The Haldia Telis, who formerly worked in turmeric, have less to do with their original trade. Both classes are usually prosperous, and many hold rich villages.

Brāhmans. Numerically the Brāhmans* form a small part of the population, but their education, social status and wealth combine with the strong religious sentiment of the district to give them importance. They are the most numerous village proprietors, next to Gonds, Binjhals and Rajputs, who being zamindārs happen to hold a larger number of villages; and they are also substantial *mālguzārs*. They are subdivided into Utkal or Oriyā; Jharuā or Aranyak; Raghunāthiās, Bhimgiriā or Pāñch Sāsani; Haluā, Aluā, Sāruā and Susāri. The Utkals, who are mostly concentrated in the town of Sambalpur, are believed to be immigrants from Utkal or Orissa and are considered the purest. The Jharuās or Aranyaks, both of which terms mean men of the forest, claim to be earlier immigrants from Orissa, and account for their name by the fact that they were the first to clear the forests in Sambalpur and settle there. The Utkals look upon them as pseudo-Brāhmans created from men of the jungle (*jhar*), who became cooks and were adopted as sons by Rājās. Now there is a separate subdivision, apparently an offshoot of Jharuās, called Susāri, a term meaning a cook or superintendent of stores and provisions. The Raghunāthiās, who are among the lowest of the Brāhmans, are more avowedly converts from local tribes, who claim to have been raised to the status of Brāhmans by Raghunāth or Rāmchandra during his wanderings in the Dandakāranya forest. The Raghunāthiās are also called Bhimgiriās or Pāñch Sāsani, and their explanation of these names is that Rājā Raghunāth

* This account of the Brāhmans of Sambalpur has been prepared from a note contributed by Mr. Hirā Lal, Extra Assistant Commissioner and Assistant Superintendent of Gazetteer, Central Provinces.

Deva of Hindol bestowed on their ancestors a *sāsan*, or royal grant, of five villages close to the Bhīngiri mountain in the neighbourhood of Ganjām. The *Aluās* and *Sāruās* are occupational subdivisions, the former having taken to growing and selling *ālu* or potatoes and the latter *sāru* or arums. These two subdivisions intermarry, and are looked upon as inferior Brāhmanas. They are chiefly met with in the Barpālī zamindārī, where also *Haluās* are found in comparatively large numbers. The *Haluās* derive their name from the plough (*hal*), which, unlike other Brāhmanas, they will handle and use.

The Oriyā Brāhmanas have eponymous *gotras*, but it is a remarkable fact that there are traces of a survival of totemistic beliefs so common among Dravidian and semi-Dravidian groups. Thus the Brāhmanas of the Bharadwāja *gotra* worship a bird of that name, elsewhere known as *nīl-kanth* or blue jay; those of the Kanduha *gotra* claim descent from a tortoise (*kaachchhap*) and not Kashyap Rishi; those of the Parāsara *gotra* revere a *pārā* or pigeon. It is difficult to account for these superstitions, but they may be a survival of ancient totemism; they may be due to the adoption by the immigrant Brāhmanas of Dravidian beliefs and observances; or they may show that, if the Brāhmanas were not originally Dravidians, they had an infusion of Dravidian blood—a theory which is supported by the reasons assigned for the formation of the various endogamous groups.

The two most numerous subdivisions are the Jharuā and Utkal. Members of the former are looked down upon by the Utkal Brāhmanas, who, being later immigrants, adhere more closely to Brahmanical rules; and there is no love lost between the two classes. The Utkals are less numerous than the Jharuās, but under native rule many of their families obtained great influence and acquired considerable grants of land. They have multiplied considerably and have subdivided their holdings without adding to them. Many have now no land and live on charity or by temple service. The pioneer Jharuās, on the other hand, are again rising in influence. They are careful cultivators, add to their estates, and, moving with the times, have engaged in mercantile pursuits and money-lending. A third class, called Lariā Brāhmanas, are still later immigrants, who have come from Chhattisgarh and settled in the north of the district. Their numbers are small, but they hold several good villages and are usually enterprising and prosperous.

The Brāhmanas of this district are generally well-to-do cultivators, and several of them are substantial *mālguzārs*. They also follow their traditional occupation of priests, officiating at

various Hindu ceremonies; and several of them are Government servants, but very few go out of the district to serve in that capacity. The Land Records staff of the district and the ministerial staff of the offices are almost entirely manued by members of the less wealthy Brāhman families. As a class, the Brāhmans usually make good village managers, and as tenants form a prosperous section of the community. But when a Brāhman cultivator is poor, he is very poor; for he is much handicapped by his caste, and more especially by the rule which forbids him to touch a plough and forces him to employ paid labour.

SOCIAL
LIFE.

The
village
communi-
ty.

A typical Sambalpur village, picturesquely screened by palm, mango and fig trees, and surrounded by tanks of deep water, has an air of comfort about it which is rarely met with in the adjoining country. The houses have small vegetable gardens attached to them, and they are encircled by a wide expanse of rice fields under close tillage. Near the village will be found a spacious mango grove, in the shade of which a bazar may be held; and here and there throughout the cultivated area are tanks used for irrigation, from the banks of which there rise clumps of palm trees. On the skirts of the village or in well-irrigated patches of land further afield are plots of sugarcane, in which some work is always in progress—channels cut, new ground taken in, new wells dug, levels made more accurate, etc. Close by is the *bāndh*, a reservoir from which the village obtains its drinking water, and this is invariably consecrated or married to a god.

In the village itself the eye is struck by the neatness of the houses in small compounds enclosed by bamboo fences. They have mud walls and verandahs, are generally thatched with straw, and are approached by flights of steps leading from the lanes. Each village has a strangers' rest-house or *derāghar* erected and maintained by the villagers, which serves as a rest-house for postmen, policemen and travellers, as a place of detention for offenders till the police are called, as the headquarters of the *chaukidār* by night, and as a common meeting-place by day. Another centre for the village gossips is the *pattābādi*, generally a platform below a tree, where the people meet in the afternoon or evening. Here they talk for an hour or two before they go to their fields in the afternoon, and here again they meet in the evening to discuss the village affairs. The principal temples are sacred to Mahādeva or Jagannāth, and in the centre of the tank containing the village drinking water will be seen a small column with a pigeon-hole or two, which is sacred to the village deity. In some unused lane may be espied the Jagannāth

car, which is kept there from one *Rath Jātrā* till another, when it is overhauled by the carpenter and decorated by the pious peasants. Most villages too contain a *bhāgabāt-gadi*, a small open shed in which the *bhāgabāt* is recited. This is invariably done during epidemics of cholera and smallpox, when the villagers assemble in three or four parties, light fires, and sing the *bhāgabāt* round them.

A few isolated houses at some distance from the village mark the *Gāndāparā* or settlement of the unclean *Gāndās*. The *Gāndā* is ordinarily a weaver, but ekes out his living by petty thefts. Dead cattle are his perquisite, and he is also the village humourist and musician in great demand at marriages and dances. Special measures have to be taken to prevent the *Gāndās* making thieving expeditions. Until recently it was the practice to sound a drum at night and take their roll-call, so as to make sure that they were not out on such raids. They are, in fact, a thief caste, and this is most probably the reason why there are in each village two watchmen, one a man of higher caste, who performs many of the *kolwār's* duties, and the other a *Gāndā chāukidār*, who is by way of being a pledge for the good behaviour of his fellow *Gāndās*.

In most villages there is a considerable aboriginal element, including the stolid Gond, the merry Kol and the light-hearted, light-fingered *Gāndā*; but Oriyās predominate. A distinguishing trait in the personal appearance of the Oriyās is the shiny look of the skin due to the use of oil, which is supposed to be a preventive against malaria. The women rub themselves with powdered turmeric, which gives the skin a lighter colour. The Oriyās are a cleanly people, bathing at least once every day and three or four times daily in the hot weather. When they bathe, they do so clothes and all, and return home with their dripping garments clinging to their bodies; the idea being that it is improper to put on a new cloth until they have bathed. They also believe that to eat before immersion in water renders them impure, and consequently the first bath is taken before the morning meal. Most of them shave the fore-part of the head up to the crown, but not the back of the head. Their clothes are scanty, the well-to-do wearing a *dhotī* and *chādar*, while the poorer classes are content with a *dhotī* only. The food of the former consist of rice, fish, vegetables and various pulses, but lately wheaten cakes have been added.

The ordinary Oriyā cultivator subsists on *bāsī* or *pakhal*, a fluid mixture of boiled rice and water; the rice is pounded by hand so that it may dissolve in water, and the mixture is left

standing during the night and drunk cold in the morning. In the hot weather they drink water in which rice has been boiled, and not plain water. They will not drink well water, as it is considered useless for *pakhāl*; and though many wells have been dug for their benefit, they are as a rule not used for drinking purposes. Shoes are rarely worn, both because the soil is so sandy as to render their use unnecessary, and also because shoes are tabooed in the rice fields. Nearly every man carries a cheroot of tobacco rolled in a *sāl* leaf, which is tucked under his *dhōṭī* at his waist or at the back of his ear. One or two are certain to have a straw plait smouldering gently; and great is their delight if a visitor gives them a box of matches.

The acknowledged leader of the village community is the *gaontīā* or headman, who is generally a Kulta or Utkal Brāhman. He is proprietor only of his home-farm, but as this usually comprises the best land in the village and is held free of revenue in return for his services, the *gaontīā* is, in wealth and status, nearly the equal of a full village proprietor. The executive council is the *pañch* consisting of some of the leading tenants, who attend to details of village management, such as the distribution of water from tanks. Their decisions command respect, and there are rarely any complaints of selfishness on their part.

The usual village servants are the *negi* or village accountant, *kumhār* or potter, *lohār* or blacksmith, *narihā* or herdsman and water-carrier, *bhandāri* or barber, and *dhoḃā* or washerman. They generally have service holdings, with the exception of the *negi*, the number of whose holdings is now small. The *negi*, it may be explained, was formerly a kind of general assistant to the *gaontīā*, but his place in the village has been taken by the *patwāri* since the Land Record staff was organized. The others are to be found in most of the larger and older villages. By ancient custom the *narihā* is the water-carrier who serves the camps of Government officers, while the *kumhār* provides pots for strangers, and receives as a perquisite any straw used in the camps of officials.

Jhāṅkar.

A noticeable feature of rural life in Sambalpur is that the *jhāṅkar* or village priest is a universal and recognized village servant of fairly high status. It is his office to sacrifice a fowl or goat, in case of illness or disaster, to the malignant deity which haunts the *bāndh*, lonely hill or wide-spreading tree. Under some such tree will be seen a small trident painted red, and probably close by a heap of past offerings now broken up and decayed. This is the shrine of the *jhāṅkar*, whose ancestors have from time immemorial been entrusted with the duty of keeping the village deity from molesting the village. Should the

depredations of a tiger call an officer to the village, the *jhāṅkar* will be found hovering near waiting to be interviewed; he must be told to do *pūjā* to the deity and promised a goat if the tiger is killed. When this has been done, the people will beat with pleasure, and a good beat is thus secured for the price of a goat.

The *jhāṅkar* is nearly always a member of one of the aboriginal tribes, and his business is to conduct the worship of the local deities of the soil, crops, forests and hills. He generally has a substantial holding, rent-free, containing some of the best land in the village. He gets a basket of grain from each tenant after threshing is over, and the heads of all the goats sacrificed to the village deity. It is said locally that the *jhāṅkar* is looked on as the descendant of the founder of the village, and as the representative of its old owners, who were ousted by the Hindus. He worships on their behalf the indigenous deities, with whom he naturally possesses a more intimate acquaintance than later immigrants. The gods of the latter cannot be relied on to exercise a sufficient control over the works of nature in the foreign land to which they have been imported, or to ensure that the earth will regularly bring forth its fruit in season.

Another peculiar feature of village life in Sambalpur is the Free
labour. institution of free labour, which is described by Mr. Dewar as follows. "The continued existence of the institution of free labour is due to the fact that profitable rice cultivation on a large scale is impossible, unless the grower can at the critical seasons of seed-time and harvest command a large supply of labour. One day's delay in sowing, due to lack of hands, may result in a week's delay, owing to unsuitable weather conditions, and that in turn may delay later operations and result in a partial or total loss of the crop if, as frequently happens, the later rain fails. For a large farm, such as is necessary to the status of a *gaontīā*, many regular farm servants are kept, who, in the seven months of the year when rice is not in the ground, do the preparatory ploughing and manuring, and work in the cane-field. But to keep on yearly hire a sufficient number of men to sow promptly all the rice land would be to lose a very large part of the present profits, because most of these men would have to be paid a year's wages for a month's work. On the other hand, there are in the Sambalpur villages very few labourers who do not themselves hold land, and those who do cannot be tempted by high wages at the sowing season. At the last census the great majority of agricultural day-labourers were found to be women, and these cannot work the plough. The result of this *impasse* is the custom by which each ryot in a village provides a ploughman

and a yoke of oxen for two days at sowing time and a sickleman for two days at harvest time to help the *gaontia* with his farm. It has been the official habit to consider this custom objectionable. But it is in fact free labour, not forced labour, and corresponds with friendly customs which to this day are in vogue among farmers in England and Scotland."

Amuse-
ments and
festivals.

✓ Dances are a favourite amusement, and one may frequently witness at night a *nāch* by the village party, the Rām Līlā or Krishna Līlā *nāch* being a great favourite. The orchestra as often as not includes the *gaontia* himself, who organizes the whole entertainment. Wherever Kols are found, the village is enlivened by their quaint but intricate circular dances, men and women arm in arm keeping good time throughout. Numerous festivals are observed in the year, of which a few may be mentioned here.

Before sowing commences, on *Akshaya tritīyā*, every tenant takes a little paddy-seed and milk, a new thong and rope, a new plough (if he can afford it), and puts on a new cloth. Then he yokes his oxen, puts three handfuls of rice in front of the yoke of the plough, and sprinkles some milk and vermilion. He gives a handful of the seed to each bullock, and facing east throws seven handfuls broadcast. Then he ploughs his land and returns home; on this day he eats no vegetables or turmeric. After the ceremony is performed, sowing may go on without interruption.

Before transplantation, a ceremony called *Kādo varishā* takes place on Srāban Amāwasyā, i.e., the 15th day of the dark half of the month of Srāban (July-August). On this occasion a goat, or it may be two goats, purchased by the subscriptions of the villagers is offered to the village deity. Before it is killed, the goat is washed, and the *jhānkā* collects from every ryot a little rice and a little paddy or *lei*, i.e., a mixture of flour or ground rice with water or milk. These humble offerings he takes to the shrine, where he makes three little heaps of them. The goat is then brought up, in order that it may eat some of the rice. If it refuses to do so, it is not slaughtered; but if it does, it is killed, and some of its blood is sprinkled on the rice. Until this ceremony has been performed, the villagers cannot transplant rice after taking their midday meal; if a man wants to do so, he must not eat in the middle of the day.

On Srāban Pūrṇimā, i.e., the full moon day of Srāban, each man ties a *rākhi* (or band) round some rice stalks, and round the horns of his bullocks, his plough, his agricultural implements, and the furniture of the house. In Sonpur they make a heap of earth surrounded by 7 pegs, with a rope of straw wound round them. A post is erected, and every one tries to jump

high as he can over the mound and the post. On this day all the boys walk about on stilts, the idea being that the crops will grow as high as the stilts. The latter are thrown into the river at the *Polā* festival, which takes place on *Amāwasyā* day in the month of *Bhādra*, i.e., on the 15th day of the dark half of the month. To celebrate the festival, the villagers make images of cows and horses, take seven pots, make seven kinds of cakes, and offer them to the gods. Afterwards, the village boys drag about models of horses and carts, and play with them.

The *Nuākhiā* festival is observed in the second fortnight of *Bhādra* (August-September) on a day fixed by the astrologers. Cakes are made and offered, and a little new rice, mixed with milk, is eaten. The *jhāṅkar* provides the rice, for he reserves one plot in which to sow early rice, so that it will be ripe by this time. The villagers go to *Samlāi's* temple, where they present a coconut, and also offer rice to *Devi*. The lowest castes worship their household gods, and do not join in the village worship.

Among aboriginal castes, the boys and girls go out to the jungle on the evening of the 11th day of *Bhādra* and cut a branch of a *karṇa* or *sāl* tree, or fell a young sapling. This they set up in the village, where it is worshipped, the villagers drinking and dancing round it all night. They pour liquor over it, and make offerings of rice and sweetmeats; a fowl is also killed, and the blood offered to the branch. In the morning the branch is taken away in procession and thrown into the village tank or the nearest stream. Songs are sung, drums are beaten, and the young people dance vigorously while coming and going with the branch. This is called the *Karma* or *Keli Kadam* festival, the story being that the goddess *Karma-rānī* once appeared to a man and promised that she would be present whenever a branch of the *sāl* tree was broken. A special feature of the festival is a long song praying for rain.

In the bright fortnight of *Bhādra*, after the *Karma* dance is over, the *Binjhāls* have a festival called the *Suā* dance. Young girls go about from village to village singing and dancing, accompanied by drummers and *Gāṇḍā* musicians. They are entertained in each village that they visit, and are lodged comfortably for the night. Next morning they dance for 5 or 6 hours, and then proceed to another village, dancing, singing and beating drums.

Mahulgundi, also called *Gundikhā*, is a festival observed on the full moon day of the month of *Phālgun* (February-March). On this day the people eat, for the first time in the year, new gram, the fruit of the mango, and, among the lower classes, the flower of the *mahuā* (*māhul*) tree and *chār*, just as new rice is

eaten on the *Nuakhiā* day later in the year. They are eaten by the male members and children of the family sitting together with their faces towards the east. The same articles are also offered, with cakes and a special kind of sweetmeat, called *sakarpati*, to the family deity and the village deity. On this occasion the Gonds go to Gichimora, offer a mixture of fruits (*gundi*) to Bura Deo, dance and drink liquor. This is an offering of the first fruits of the year and takes place at the same time as the *Hoh*.

Another curious festival is that of a sub-caste of the Savarās, called Pātnār Savarā or Patauriā Savarā, who go about dancing and charming snakes. Every third year they meet at Bandha near Khamunda, 8 miles from Bargarh, and stay there a month. Anyone who has committed an offence during the last three years is fined, and the proceeds are spent on providing liquor for the assembled Savarās. The method of ordeal is to mix some cow-dung with boiling water, and the man who is on trial has to plunge his hand into it. If his hand is burnt, he is guilty; but usually the water is not boiling.

The *Rath Jātrā* festival takes place on the 2nd day of the light part of the month of Asārh (June-July). This is an important festival in this district, and is a copy of the festival as observed in Puri. In the town of Sambalpur, and in villages where there are temples of Jagannāth, or of Jagannāth, Balabhadra and Subhadra, cars are prepared for the festival, and on the *Rath Jātrā* day the images of the deities are seated on them. The cars are then dragged to the extremity of the town or village with music and dancing, and are there turned towards the south. This, it is said, is done so that Bibhishan, king of Lanka (Ceylon) may see the images, for when Rāmchandra, after killing Ravana and installing his brother Bibhishan as king of Lankā, returned to his own kingdom, he promised Bibhishan that he would be granted a glimpse of his person on this one day in the year. The people wear new clothes and eat rich food, and altogether it is a day of general festivity. The peasants of villages, where there are no temples of Jagannāth and no cars, go to the nearest village where the festival is observed and join in it there. The cars are dragged back eight days afterwards, this festival being called the *Bahūda Rath Jātrā*.

The *Dasaharā* festival is observed in the month of Aswin (September-October), commencing on the first day of the light part of the month and continuing up to the 10th day. The goddess Durgā is worshipped, and goats, and rarely buffaloes, are sacrificed to her. On the eighth day women and girls who

have brothers worship Durgā, fasting the whole day and praying for the prosperity of their brothers. This day is called the *Bhāi-juntā* day. On the tenth day, when the worship of Durgā concludes, people of the town go to the temple of Samlāi, and it is also customary to pay visits to elderly persons. In the zamindāris the *gaontās* and *thikādārs* pay to their respective zamindārs a customary cess called *Dasaharā dekhā*, consisting of money, goats, *ghī*, etc.

Pus Pūrnimā, *i.e.*, the full moon day of the month of Pus (December-January), is a day of joy and cheerfulness among the cultivating classes, because the year's agricultural work is practically over. On this day field labourers employed for the year are discharged; grain advances made to cultivators are repayable; and Brāhmins put on a new sacred thread.

CHAPTER IV.

PUBLIC HEALTH.

CLIMATE. SAMBALPUR has long had an unenviable reputation for unhealthiness. As early as 1766 we find it stated by Mr. Motte, in the first published account of the district, that the air was "very unwholesome owing to the great vicissitudes of heat and cold," that the inhabitants were subject to rheumatism, and that every man in his escort was affected by violent fevers.* Subsequent accounts are not less unfavourable. Not to multiply instances, a description of the country in 1841 says categorically that "the climate of Sambalpur is very pestiferous; indeed, so great is its unhealthiness that it has proved the grave of almost every European officer who has been stationed there."† It cannot be said, however, that the mortuary returns bear out these statements, for the death-rate reported is lower than in most Bengal districts, averaging only 20·72 per mille in the four years 1901—04, while it was 24·04 per mille in 1906 and 24·55 in 1907. It appears, indeed, that the district has been maligned and that it does not compare unfavourably with other districts of Bengal.

**VITAL
STATIS-
TICS.**

The system of reporting vital statistics is the same as that adopted in the Central Provinces, in which the district was till recently included, and is different from that prevailing in Bengal. In rural areas the duty of reporting births and deaths devolves on the headmen of villages and village watchmen. The village watchman is supplied with a printed book in which entries of births and deaths are made as they occur by the headman, or, if he cannot read or write, by a *patwâri* or schoolmaster. At prescribed intervals, usually once a week, the village watchman takes his book to the police post to which his village is attached, and the entries are copied out into his vital statistics register by the police *muharrir*, who initials each entry in the books. The register is checked by the Superintendent of Vaccination, and any mistakes or omissions are corrected. Copies of the totals entered in the register are forwarded monthly to the

* Narrative of a Journey to the Diamond Mines at Sumbhulpur, Asiatic Annual Register, 1799.

† Bengal and Agra Gazetteer (1841), Vol. II, p. 224.

Civil Surgeon's office at headquarters, where the district returns are made up. In municipal towns the duty of reporting births and deaths rests with the nearest male relative (above the age of 16 years) of the person born or deceased, and breach of this rule is punishable with fine, which may amount to Rs. 50. Reports are made to, and vital statistics maintained by, the police as in rural areas, and are checked by the municipal vaccinator.

According to the returns thus prepared, the highest birth-rate since 1891 has been 55.18 per mille in 1899 and the lowest 30.16 per mille in 1901. The highest death-rate recorded is 108.18 per mille in 1900, the abnormal mortality being due to a terrible epidemic of cholera, and to the weakness of the crowds of wanderers who came into the district, during the famine of that year, from the surrounding States and districts. The next year witnessed the lowest death-rate yet recorded in the district, viz., 19.56 per mille. A curious feature of the returns is the difference between the birth-rate and death-rate in the *khālsa* and zamindāris, as illustrated in the following statement showing the births and deaths per mille:—

Year.	Births.		Deaths.	
	<i>Khālsa.</i>	Zamindāris.	<i>Khālsa.</i>	Zamindāria.
1900 	37.62	44.49	89.22	114.77
1901-04 (average) ...	36.62	51.94	19.58	22.98

According to the returns submitted year by year, the greatest mortality is caused by fever, which in 1907 gave a death-rate of 9.97 per mille out of the total death-rate of 24.55 per mille. The following account of the types of fever prevalent has been contributed by Captain F. H. Watling, I.M.S., recently Civil Surgeon of Sambalpur:—"The majority of cases of fever in the district are of the well known malarial types, and are caused by benign tertian, malignant tertian, and, very rarely, quartan fever parasites. The graver forms, viz., those caused by the malignant tertian parasite, prevail during the latter half of the monsoon and still more after it, i.e., during September, October and November, and to a much less extent from December to the end of March. The period, April to July, is almost free from this type of fever. The milder forms, viz., those caused by the so-called benign tertian, occur throughout the year, but like the malignant types are most prevalent during and after the monsoon period, i.e., during the seven months from August to March.

PRINCIPAL
DISEASES.
Fever.

"As the result of these constantly prevailing malarial fevers, one would expect a very high spleen rate among children, but this is not the case here. The highest spleen rate I have seen among school children in the district was 11 per cent. at Balbaspur, a few miles from headquarters, and a notoriously insanitary place. I should say the average for the whole district is about 5 per cent.; these figures are for the period November to April (when the Civil Surgeon goes on tour). There is practically no sale of quinine in the district. As regards other complications, the liver is often affected, there being a varying amount of tenderness and hyperæmia. The other organs are unaffected. During the latter half of May and June a few cases of malarial fever of a hyperpyrexial type, with marked cerebral symptoms, occur. These cases are mostly fatal and are very like cases of heat-stroke.

"There is one fever of special interest, which occurs in the autumn (especially after an unusually hot dry summer) and is locally known as *motijhira*. It usually prevails in small epidemics, attacks either sex, and mostly young adults or older children. Its mode of onset, course and termination are exactly like typhoid fever; and the temperature follows a typical typhoid fever course. The points of difference are (1) absence of diarrhœa in almost every case; (2) the eruption appears from the fourth to eighth day (earlier than that of typhoid) on the chest, sides of neck and face, and then spreads over the rest of the body. It is popular and exactly resembles that of measles, except that it is more discrete and more distinct to sight and touch. The eruption continues for 3 weeks or as long as the fever lasts. The mortality is about 8 to 10 per cent. Quinine has no effect on this fever. The notes on this fever have kindly been given by Hospital Assistant Ganesh Prashād, who was twenty years in the district. I have seen no cases myself, but to my mind the clinical picture so closely resembles typhoid fever, that I would be chary of classing it otherwise without definite agglutination tests.

"The other fevers are few and unimportant. I saw one case of relapsing fever in a pilgrim returning from Puri. Occasionally when on tour I have come across cases of enormously enlarged spleens in subjects who are markedly anæmic and cachectic; and it is quite possible these were cases of the cachectic fever described by Major L. Rogers. No spleen punctures were made."

Other
diseases.

Among other common diseases may be mentioned dysentery and diarrhœa, respiratory diseases, skin diseases, rheumatic affections of a chronic type, and diseases of the eye. Dysentery and diarrhœa are unusually frequent and fatal, the death-rate in 1907 being 2.81 per mille. The prevalence of these and

other bowel complaints should probably be attributed to the impure source of drinking water-supply, for in this district the people almost invariably drink tank water, which in the hot weather months becomes polluted, turgid and impure. Respiratory diseases are also responsible for a greater mortality than in other districts of Bengal, the death-rate in the same year being 1.22 per mille. Epidemics of cholera were formerly common, breaking out nearly every hot season owing to the train of pilgrims on their march to and from the temple of Jagannāth at Purī. Since the pilgrim traffic has been diverted to the railway, such epidemics are neither so frequent nor so deadly. Spleen is common in the jungly districts, where the water is impregnated with decaying vegetable matter. Syphilis is prevalent, and occasionally very bad forms are met with, which are probably due to the lack of proper treatment. Infirmities, such as blindness, leprosy, deaf-mutism and insanity, are comparatively rare. It is reported that leprosy appears to be more common south of the Sambalpur-Raipur road than north of it.

Village sanitation is regulated by the Central Provinces Village Sanitation Act and the *Mukaddam* Rules, which are a legacy of the administration of the Central Provinces. It may be explained that in the Central Provinces Land Revenue Act, 1881 (amended by Act XVI of 1889), it is provided that the *mukaddam* or headman of the village has, among his other duties, "subject to any rules issued by the Chief Commissioner, to keep his village in good sanitary condition." This enables the Government or its officers to cause action to be taken in any small village in respect of any flagrant violation of sanitary principles. It is the headman who is responsible, and who must take action under the law. There are, however, many villages which are too large for the sanitation to be left in the hands of the *mukaddam*, and yet too small to come under the Central Provinces Municipal Act of 1889, which, like the Bengal Municipal Act of 1884, provides for large towns. They require systematic administration, involving a little taxation; and at the same time the elaborate machinery of the Municipal Act is unsuitable. For such villages the Village Sanitation Act (XI of 1902) was passed.

The principal provisions of this Act are that it may be extended to any insanitary village containing not less than 500 inhabited houses (section 2); that the administration of the Act shall be committed to a village *panchayat* consisting of the *mukaddam* and representatives of the village elected by its inhabitants (section 3); that for this purpose funds shall be placed at their

disposal (sections 4 and 5), which may include an assessment on houses and land, and a levy of license fees on weighmen or measurers of goods brought for sale, of tolls on carts, pack-animals and potters bringing such goods, of market dues, *i.e.*, rents from temporary dealers, and of fees on the voluntary registration of cattle sales. The breach of the provisions of the Act is punishable by fine [section 7 (3) and section 9], and prosecutions may be instituted on the complaint either of the Deputy Commissioner or of the *panchayat*, or of some persons authorized to act on behalf of either. The operation of the Act in the case of any village may be limited to simple conservancy, or it may be extended to include "the improvement of the water-supply or of the village roads, or any other work of public utility." Briefly, the Act authorizes the creation of a small fund to be expended on sanitation in important villages, which are not sufficiently large to be made municipal towns. The arrangements are in the hands of a small committee of the residents, and simple rules for the disposal of sewage, the protection of the water-supply, and the preservation of cleanliness in the village generally, are enforced. This Act is in force in Bargarh and Jharsagurā.

The *Mukaddam* Rules, which have been introduced in Barpālī and Padampur, provide for a house-tax and rate on rents, but do not provide for the appointment of a committee. Under these rules the headman is responsible for the enforcement of certain elementary sanitary precautions, and the villages under them are inspected by officers on tour to see that they are observed. It should be added that the *mukaddam* is responsible for the sanitation of every village, but has been empowered to maintain a special establishment only in the two places mentioned. The sanitary requirements are the same in either case, and both *mukaddams* and ryots may be punished for their neglect.

VACCINATION.

Vaccination is compulsory only in the municipal area of Sambalpur, but is carried on by itinerant paid vaccinators in the interior. Though regarded by certain sections of the community with some dislike, it cannot be said that there is any general antipathy to the operation. Speaking generally, there is no objection to the primary vaccination of children, but the people, as a rule, look upon revaccination with aversion. The number of persons successfully vaccinated in 1907-08 was 26,400, representing 42.37 per mille of the population, and it is noticeable that of these no less than 1,942 were cases of revaccination. In the same year protection was afforded to as many as 925 per thousand of

infants, and no other Bengal district except Rānchi had such a good record.

Inoculation for small-pox was formerly practised, but has now disappeared. How common it used to be may be gathered from the following account in a Report on the Medical Topography of the South-Western Political Districts by Mr. J. Shortt, Assistant Surgeon, 1855 :—" Small-pox devastates whole villages, and hence small-pox inoculation is practised, and is the chief source of contagion, from whence the disease propagates itself far and wide. It is practised by ticcadars, who make it their means of livelihood. The practice is compulsory, that a member of a family is bound to follow in the same occupation as his predecessors for the maintenance of himself and family. Vaccination is not known, nay, more correctly speaking, has never been heard of in these parts. From personal interview with ticcadars, they as well as the people, on its being explained to them, had no objection to vaccination being substituted for inoculation. The people dread the present practice, yet, the evil being a necessary one, they are obliged to resort to it."

Charitable dispensaries have been established at Sambalpur, Bargarh, Jharsagurā and Padampur in the Borāsāmbār zamin-dāri. There is also a leper asylum at Sambalpur maintained by private subscriptions and from the rent of a bungalow left for the purpose by Mr. Goodridge. Particulars of the working of the charitable dispensaries may be gathered from the following table which gives the salient statistics for 1907 :—

Dispensary.	Beds.		Total number treated.	Daily average.		Receipts.	Expenditure.
	Males.	Females.		Out-patients.	In-patients.		
						Rs.	Rs.
Sambalpur ...	16	8	33,706	154	20	6,833	4,815
Bargarh ...	4	2	14,512	55	2	1,719	1,054
Jharsagurā ...	...	...	5,363	41	...	1,184	910
Padampur ...	8	3	4,625	17	1	947	947

MEDICAL
INSTITU-
TIONS.

CHAPTER V.

FORESTS.

RESERVED FORESTS. THE reserved forests of Sambalpur extend over 396 square miles, and are situated on the Bārapahār hills in the north of the Bargarh subdivision and on the ranges in the east and south of the Sambalpur subdivision. There are two types of forest, one consisting of *sāl* (*Shorea robusta*) interspersed with bamboos and other trees, and the other being mixed forest of bamboos and inferior species. *Sāl* forest, which thrives best on well-drained slopes of sandy loam, occupies all the hills and valleys of the Sambalpur range and the principal valleys of the Bārapahār range, with an aggregate area of about 238 square miles. The mixed forest is situated on the dry rocky hills of the Bārapahār range, where *sāl* will not grow, and covers 155 square miles. For administrative purposes the forests are divided into 2 ranges and 43 blocks. Ten of these blocks are situated in the Bargarh subdivision, where eight of them form the Bārapahār range; and the Sambalpur subdivision contains 33 blocks, which, with the remaining two blocks in the Bargarh subdivision, make up the Sambalpur range. The area of the two ranges is 212 and 182 square miles respectively. The Bārapahār forest is composed of a large, compact group of blocks to the west of the Mahānadi river, while the Sambalpur range includes a number of detached blocks of various sizes, which for the most part occupy hilly, or more or less broken ground to the east of that river.

**History of
conservancy.**

Forest conservancy appears to have been neglected during the early years of British administration in this district. In 1866 the Settlement Commissioner raised the question of the advisability of Government setting aside and conserving waste lands to which neither private persons nor village communities could lay claim. The selection of such lands was finally carried out in the course of the settlement operations between 1872 and 1876, and is described by the Settlement

The account of the reserved forests is mainly a reproduction of a note kindly contributed by Mr. A. L. McIntire, Conservator of Forests, Bengal.

Officer as follows:—"As the villages in the *khālsa* (the term used for villages held direct from Government by village headmen) were being inspected preparatory to assessment, the opportunity was taken of examining hill, waste and forest-covered tracts. In doing so, the wants and requirements of the people in the neighbourhood were fully taken into consideration. The operation of excluding waste lands was necessarily confined to hill and jungle tracts, which had notoriously been in the actual possession of no individual or community, which had hitherto in fact been common property, to which any body that liked resorted, cut timber, wood, grass, bamboos, made *dahi* fields and *rambhās* (hill slopes sown with Indian corn, castor and cucumbers), and, in fact, helped themselves to anything they wanted, without let or hindrance from any one. In such tracts it was that the rights of the State were asserted. The selected tracts were demarcated separately from village areas, and were declared to be the property of Government." The forests were notified as reserved forests under the Forest Act in 1878, a revised notification being issued in 1897.

In selecting them many Government waste lands, mostly wooded, were excluded and allowed to form part of the *gaontiahi* villages, and the large forests in the zamindaris, the owners or occupants of which could claim the ownership of waste lands, were not affected. The principal objects of reservation appear to have been the preservation of the sources from which the inhabitants of the district derive a supply of forest produce, and the securing of the indirect advantages which are generally believed to result from forest protection, such as an increased and well-distributed rainfall, the safety of slopes, and the preservation of sources of water-supply.

Until 1887, when a Forest Officer was appointed, the reserves were managed by the revenue officials with the help of a very small staff of subordinates; and inhabitants of the district were allowed to cut and collect produce in them, and to graze their cattle as much as they liked, on payment of a fee of four annas a year on each plough or roof. The latter is known as a commutation fee, because the villagers are allowed to commute for their annual supply of fuel and timber for home consumption on payment of a fixed sum. The appointment of a Forest Officer led to the formation of the Sambalpur Forest Division and the introduction of the forest stamp system, which is a feature of forest management in the Central Provinces. Under this system respectable inhabitants of conveniently situated villages are appointed forest license-vendors. They supply applicants with

Commuta-
tion and
stamp
system.

licenses to cut and remove such produce as the latter may require on payment at rates specified in an authorized schedule of prices; and they place on each license forest stamps, which they can purchase from the treasury, of the value of the produce covered by the license. Their remuneration consists of a commission (generally one anna in the rupee) on the amount spent by them on purchasing stamps from the treasury. This system, as it obliged villagers to pay for every thing they removed from the reserves, and led to the reservation of the more valuable kinds of trees, was a great improvement on the commutation system.

Manage-
ment.

A further improvement was effected by attempting to protect a part of the forests from fire. But no attempt was made to introduce located fellings or to regulate grazing till 1893, when sanction was given to a working plan for the Bārapahār and neighbouring forests, which form the Bārapahār range. This working plan prescribed coppice fellings in small areas, and improvement fellings in some other areas, but made no arrangement for the management of the greater part of the range; and when it was sought to carry out its provisions, it was quickly discovered that the demand for poles and firewood was insufficient to justify them. Hence there have been various modifications of the plan, of which the only practical effect has been to restrict the cutting of green trees to areas sufficient to supply demands in the localities concerned and to permit of the subsequent closure to grazing of areas so cut over. Similar arrangements have also been made in parts of other forests, i.e., in the Sambalpur range, where they appeared to be justified by local demands; and in this latter range efforts were also made, between 1900 and 1905, to increase revenue by cutting into railway sleepers any large-sized *sāl* trees which could be found.

Since 1905 it has been sought to introduce a better regulation of fellings of all descriptions. But such efforts are greatly hindered by the fact that large numbers of the inhabitants of the district can still obtain all the forest produce they require from village lands or the zamindāri forests, or live at such distances from the reserves that they cannot readily make use of the latter. In fact, bamboos are still the only product of the reserves for which there can be said to be a general demand. It has also been sought to select for special management areas which, while they are unlikely to have to meet a large local demand, appear to be suitable for producing *sāl* timber for export, and to close such areas to grazing as far as possible. It is estimated that the total area now available for this kind of management is between 50

and 60 square miles. At the same time, the exclusion of goats and sheep from the reserves has been carried out; fire protection has been improved, the area under special protection being now 302 square miles (which will shortly be increased); and arrangements have been made to acquire a number of small villages enclosed in the Bārapahār forest, which have long been sources of danger to that forest.

The most important tree in the reserves is *sāl* or *rengāl* (*Shorea robusta*), which is found in greater or less abundance in most parts of the Sambalpur range and in the lower parts of the Bārapahār forest. Other trees having a value for export are *piāsāl* or *bijā* (*Pterocarpus Marsupium*), which is scattered over most of the slopes and is fairly abundant in parts of the Bārapahār forest; *sisū* (*Dalbergia Sissoo*), which has much the same distribution as *piāsāl*, though it is rarer than the latter; and *bhirā* (*Chloroxylon Swietenia*), which is well represented on small areas scattered throughout the forests. Besides these, there are a number of inferior kinds of trees, which are used locally for house-building, for making agricultural implements, and for fuel, e.g., *garāri* (*Cleistanthus collinus*), *sāj* or *sāhaj* (*Terminalia tomentosa*); *kendu* (*Diospyros Melanoxydon*), *senha* (*Lagerstræmia parviflora*), and many others. Bamboos (*Denärocalamus strictus*) also abound on nearly all the slopes and ridges; and teak is found in one small forest near Sambalpur.

Sāl is, as a rule, only represented by poles and small trees up to 3 or 4 feet in girth; and so far as the greater part of the area is concerned, it appears doubtful whether fine trees yielding timber suitable for export will ever be grown. But in the areas, aggregating 50 to 60 square miles, which are under selection in the Sambalpur range for special management, conditions appear to be more hopeful. Such areas generally contain, besides considerable numbers of promising young trees, up to 3 feet or rather more in girth, a sprinkling of large, often well-grown, *sāl* trees. The almost universal rottenness of these large trees may reasonably be attributed to past burning and the system of shifting cultivation known as *jhām*, and to the persistent cutting out of the soundest trees before the forests were protected. Of other kinds of trees all that it is necessary to note is that, though fair-sized specimens of all species are to be found here and there, they are usually represented by miniature or ill-formed trees or poles. Generally, the incompleteness of the crop, the scarcity of large, well-grown trees, and the relative abundance of ill-formed trees of small or moderate size, afford abundant evidence of the abuses to which the forests have till quite recently been exposed.

It is, however, clear that, though in many places grazing retards their improvement, the forests are slowly recovering. Seedlings of most kinds of trees, especially of *sāl* in the places where that tree is largely represented, are becoming numerous, and it is probable that in about 20 years nearly all parts of the forests, excepting relatively small areas where the soil is very poor indeed, and larger areas where bamboos have become very dense, will be well stocked with young trees of various kinds. As the demands of villagers increase—and they are almost certain to increase owing to the continued exhaustion of outside sources of supply and increased wants—it will be comparatively easy to regulate fellings, so as to meet their requirements and provide for the improvement of the forests. And though it will take long, probably 40 to 50 years, to produce any considerable quantity of large timber for export, a slow but steady increase in exports of *sāl*, *bijā*, *sisū*, and possibly also *bhūrā*, may be expected.

Revenue.

In the past most of the revenue has been derived from sales of produce, especially bamboos, at low prices, under the forest stamp system, to residents of the district, though the sleeper works already referred to gave some assistance. In the 10 years ending in 1904-05, the average revenue, expenditure and surplus of the Sambalpur Division were Rs. 28,979, Rs. 24,809 and Rs. 4,170 respectively. In the subsequent two years sleeper-cutting was stopped, but the loss of revenue caused in this way was more than made good by increased local sales under the stamp system and by sales of the produce of moderate improvement fellings in the more promising *sāl* areas of the Sambalpur range. The average revenue, expenditure and surplus for these two years have been Rs. 34,542, Rs. 26,622 and Rs. 7,902 respectively. There is every reason to anticipate a gradual increase in the revenue and surplus, and the latter is almost certain to attain a respectable figure in the course of the next 40 to 50 years. But forest management in the Sambalpur district is mainly justified by the consideration that without it all forests would eventually be destroyed; and even if their destruction resulted in no other disadvantages, the exhaustion of local supplies of forest produce would be a very serious blow to the prosperity of the district.

ZAMINDARI FORESTS.

At the first settlement of the district it appears to have been the intention of Government, in dealing with zamindari forests, to allot for the use of the estate a sufficient area of forest land, and to exclude the remainder as Government forest. Subsequently, however, the intention of forming separate State reserves from the zamindari forests was abandoned, and it was decided that the whole forest area was to be left to the zamindār,

but that in order to mark the right of the State to share in the produce of the forests, and to guard against the infringement of that right, the forests were to be separately assessed, and to be settled for periods of three years only. These orders were, however, only so far carried out in Sambalpur as to assess a forest *takoli* separately from the land revenue *takoli*. No attempt was made to demarcate the forests, nor were the *takolis* made liable to triennial revision.

At the next settlement (1885-89) it was determined to give more complete effect to this policy, and orders were issued laying down that "all extensive tracts of jungle included in a zamindari should be declared to form a separate forest *mahāl*. For this purpose it is not necessary that the limits of such tracts should be precisely defined, and, in zamindaris which have not been surveyed, it will suffice if the position and extent of each forest tract be described by the assessing officer as clearly as may be with reference to the villages which adjoin it and any prominent natural features. A brief description of the character and capabilities of each forest tract should also be recorded. An estimate should then be framed of the income derived by the zamindar from the forest *mahāl* of his estate, and a *takoli* be assessed on the basis of this estimate, having reference of course to the amount of the forest *takoli* paid at present. Speaking generally, the share of the forest income taken as *takoli* should be from 40 to 60 per cent., but the Chief Commissioner would be prepared to sanction considerable deviations from this." The engagement for the payment of forest *takoli* was to contain a stipulation binding the zamindar to manage in accordance with the orders of Government. Subsequently, the zamindari forest *mahāls*, as formed by the Settlement Officer, were formally declared to be forest *mahāls* within the meaning of section 46 of the Central Provinces Land Revenue Act, and rules of management were issued under section 124A of that Act.

In accordance with the above orders, the amount of the forest income of the zamindaris was roughly ascertained during the settlement of 1885-89, and a small assessment was fixed on it independently of the land assessment. It was apparently intended to revise triennially the assessment on a source of income which promised rapid development; but that policy was not carried out, the *takoli* fixed in 1885-89 remaining unaltered till the recent settlement. The procedure now followed is to ascertain as closely as possible the average gross income of the forests, to deduct from this the cost of the forest establishment maintained, to treat the remaining net income as assets, and to fix on it a proprietary

kāmil-jamā, i.e., the full assessment which a zamindār would pay if he had no feudal status but held as an ordinary proprietor. *

The area of the zamindāri forests is 375 square miles, but of the sixteen zamindāris in the district only nine possess forests which yield an annual income, viz., Borāsāmbār, Ghee Kolābirā, Kodābāga, Lairā, Loisingh, Machidā, Rājpur and Rāmpur. They contain practically the same species of trees as the Government reserved forests. The value of the zamindāri forests, especially in the Borāsāmbār estate, is considerable; but until communications are improved, no large export of timber from that estate is possible. Other estates, however, such as Kolābirā, Rājpur and Rāmpur are situated along or close to the railway. Those in the Sambalpur subdivision are at present of considerable use not only to cultivators in the zamindāris, but also to those residing in *khālsa* villages in the neighbourhood, who usually find it more convenient to deal with the zamindārs than with the Government Forest Department.

VILLAGE FORESTS.

The village forests comprised in the *khālsa* area outside the reserves, which are either *khālsa gaontīāhi* or *mālguzāri*, are of much less value. Throughout the *khālsa* area in the Bargarh plain all valuable forest has long been cleared. Much of this area is now cultivated; and though there are extensive tracts of scrub-jungle in the immediate neighbourhood of the reserves, all good timber has been cut out, and no replanting is ever done. These tracts are not culturable, and it is a misfortune that their timber should not have been conserved. The direct consequence is that villages in the most populous and closely cultivated part of the district have now no timber, bamboos, or even light fencing material near them, and cultivators have to cart what they need at considerable expense from distant Government reserves. In the Sambalpur subdivision conditions are not so bad; but the village forests here also are being rapidly cut out. In this latter tract the only *mālguzāri* forest of any extent or value now existing is that of the Tāmpargarh estate.

FUEL AND FODDER RESERVES.

At the settlement of 1885-89, 16 fuel and fodder reserves, with an area of 11,000 acres, were set aside, but no arrangement was made to regulate the use of their produce. Many orders were passed, but nothing was done to enforce them. The area reserved, moreover, consisted chiefly of bare boulders incapable of bearing either timber or forage; and what growth there was has been cut out exactly as in the village forests.

SYSTEM OF MANAGE- MENT.

It is reported that the methods of upkeep both in fuel and fodder reserves and in village forests are not all that could be desired. Nominally, these areas are Government property (except

in the case of the few *mālguzāri* estates of the district), and any overcutting or bad management on the part of the headmen of villages can be met by the Deputy Commissioner taking the forests under direct management. But this provision is not a practical one where there are a number of small scattered forests, and no special staff is maintained; for the Land Records staff is not strong enough to manage adequately village forests in addition to its present work.

The steps taken at the settlement recently concluded in order to prevent the misuse of these forests are described as follows by the Settlement Officer:—"The ill-effects of deforestation in the Bargarh plain pointed to the necessity for checking very carefully the boundaries of the village forests. In very many cases these were found to have been encroached upon for cultivation without competent permission. It is unfortunate that the wording of the detailed rules framed under section 124A of the Central Provinces Land Revenue Act has hitherto prevented their application to the villages and forests of Sambalpur, which are held by *gauntiās*, not as proprietors but as trustees. At this revision the general rule of the trust has been clearly restated. It points out that the produce of the forest of a *gauntiāhi* village cannot be exported, but must be used only for domestic and agricultural needs within the village itself. It has been proposed by several *gauntiās* living in one village to bring timber for domestic use from the forest of another village under their management. Brāhman *gauntiās* living in Sambalpur town wish to export wood from their villages to their houses. But as the trust is now frequently abused by the illegal sale of timber, the extension of the rule has not been considered advisable."

The following account of the general conditions obtaining is quoted from Mr. Dewar's Settlement Report:—"The district is still well wooded, but of late years cultivation has greatly extended, and in the more level tracts there are now no patches of timber-forest among the villages. Over the whole of the *khālsa* area outside the Government reserves there are about 124 square miles of "big-tree-jungle" and 333 square miles of scrub. But the latter area is all but useless, and the former is confined to parts of the eastern *tahsil*. At last settlement certain fuel and fodder reserves were excised from villages in the more open tracts. But their area was very small, their surface consisted almost entirely of bare rock, and they now grow no timber and but little fodder. The needs of the cultivator are met almost entirely from the Government reserves, which cover 396 square miles, and from the zamindari forests which, excluding those

GENERAL
CONDI-
TIONS.

of Phuljhar, cover 375 square miles. East of the Mahānadi the villages deal chiefly with the zamindāri forests or with those of neighbouring States, because the prices exacted are usually lower than those of Government, and the conditions of sale are much more free and elastic, and give less scope to the delays and exactions of underlings. In the Bargarh plain all except the western villages get their supplies from the Government reserve in the Bārāphār range.

"The chief requirement is the bamboo, for the wattling of house-walls and roofs, for screens, baskets and mats, and for the fencing of vegetable gardens and cane-fields. It is abundant in all forests. So too is the class of small second-rate timber, such as the *karla*, *dhāora*, and *senha*, which are used for house-timber and carts. The *sāj* is also plentiful, and the *kusum*, which is used for ploughs, cane-mills, and other implements of hard wood. There is at present no large supply of big timber for export. The Government forests consist largely of steep and rocky hills, and have not been long under careful conservation. Most of the zamindārs with estates near the railway have in the past years acted on the principle that "timber is an excrescence of the earth provided by God for the payment of debts." Their forests are now thin. There is no teak, the most valuable timber trees being the *sāl* or *rengāl* and the *bijā*. Of these there is a good stock of saplings in the forests east of the Mahānadi, but it will be some years before their growth will permit of sleeper-cutting on a large scale. The big estate of Borāsāmbār has fair timber forests, which have of late been opened up, but their distance from a railway prevents full exploitation. Of miscellaneous forest produce, such as lac and myrobālans, there is but little export."

CHAPTER VI.

AGRICULTURE.

THE district consists of an undulating upland plain, broken by rugged ranges of hills and isolated peaks, and intersected in every direction by drainage channels leading to the Mahānadi. A considerable portion of the area consists of ground which is too much broken up by ravines to be banked into rice fields or of broad sandy ridges, which are agriculturally of very little value. The configuration of the country is, however, exceedingly well adapted for tank making, and the number of village tanks is one of the most prominent features. The low lands are generally cultivated with rice, and are skilfully embanked, manured and irrigated. The uplands are much less carefully cultivated, are not embanked, and grow miscellaneous crops, such as pulses, sesamum, coarse rice and cotton. When the ground is newly broken, good crops are secured for several years with very little labour and no manure; but the soil is speedily exhausted, and chance cropping is the rule in all the more closely settled tracts. In soil and lie of surface the western portion of the district, comprised in the Bargarh subdivision, is inferior to the country lying round Sambalpur and to the north of the Barapahār hills.

GENERAL
CONDI-
TIONS.

In the greater part of the Bargarh subdivision the country has a very decided slope, and is much cut up by ravines and watercourses; the soil is light and sandy, and the proportion of practically uncultivable land is large. In the Sambalpur *tahsil* the soil is, as a rule, richer, because it contains more decayed vegetable matter washed down from the wooded uplands; while the land round Sambalpur itself and a strip running along the bank of the Mahānadi are much more productive, being fairly level and mostly fit for rice cultivation.

As explained in Chapter I, there are four minor divisions, the agricultural conditions of which differ very largely, viz., (1) the Bargarh plain, (2) Borāsāmbār, (3) Ambābhonā and Lakhanpur, and (4) the Sambalpur *tahsil*.

TRACTS
OF FERTI-
LITY.

The Bargarh plain is a large and fertile tract containing one-third of the entire cultivated area. It is drained by the Dantā and Jirā rivers and by a number of small tributaries,

which are, however, of little use for irrigation, and during September and October suck away the water that is needed for the rice fields on their banks. The soil is a good light rice soil, and in the numerous depressions is very productive. Sub-soil water is within easy reach, and cheap irrigation wells, not deeper than 20 feet, hold water throughout the hot weather. Reckless deforestation, however, has gone on for last 30 years and has seriously affected cultivation in three ways. It has prejudiced the cultivation of sugarcane by making its fencing expensive. The loss of firewood has driven the poorer classes to the use of cow-dung for fuel, with the result that there is now no manure to spare for the light-soiled uplands, which formerly grew cotton. Lastly, it is said that the southern villages, which have the deepest soil and are most closely cultivated, now receive a shorter rainfall than they used to have. On the other hand, the undulating character of the country is admirably adapted for the construction of irrigation reservoirs, and the cultivators have taken full advantage of these natural facilities. There are hundreds of big tanks commanding the deeper rice lands, and thousands of smaller tanks above the numerous depressions.

Conditions are very different in Borāsāmbār, which is a hilly tract, chiefly inhabited by aboriginals, in which agriculture is in a backward state. There is a wide valley to the east formed by the Ang river, and this is the most fertile portion of the estate, for its soil contains river silt and is enriched by hill drainage. In the third tract there is a fairly level expanse in Ambābhonā sloping down from the hills to the river, with shallow soil and outcrops of sandstone rock. Its soil does not differ much from that of the southern plain, its cultivation is equally close, and it has several good irrigation tanks. In the Lakhanpur outpost most of the villages lie in a wide valley surrounded by hills, but some are found along the bank of the Mahānadi, and others are mere forest clearings; but most of the latter have now been acquired for the Forest Department.

In the Sambalpur *tahsil* the land near the Mahānadi and Ib rivers contains rich silt, but elsewhere in the more open tracts, the soil is very much the same as that of the Bargarh plain, except that it contains more gravel and less sand. Hills and forests are scattered over the north, east and south, from which a large amount of vegetable silt is washed down every year into the fields of the nearer villages. Many of the inland villages, moreover, which only of late years are being fully developed, have a fine brown loam that is exceptionally fertile. The irrigation tanks are as numerous and good as those of Bargarh,

but are less needed, because the rainfall of this more easterly tract is comparatively heavy and regular.

The black soil which forms so marked a feature in the adjoining districts of the Central Provinces is almost unknown in Sambalpur. It occurs in the north-west of the district beyond the range of Vindhyan sandstone which shuts off the Ambābhonā valley, and across the Mahānadi towards the Bilāspur border. The soil which covers the greater part of the country is apparently derived from underlying metamorphic rocks, and the differences found in it are mainly due to the elimination and transportation effected by surface drainage. The finer particles have been carried into the low-lying areas along drainage lines, rendering the soil of a clayey texture, and leaving the uplands light and sandy.

The most usual classification of the soils of the district is based on their position or level. This is an important consideration to the cultivator, since the country is undulating, except along the banks of the larger rivers, and consists of ridges and slopes and of the depressions between them. The four main divisions are *āt*, *māl*, *bernā* and *bāhāl*. *Āt* land consists of high-lying land on a watershed, i.e., the uplands which are dependent for moisture on rainfall. They are, as a rule, sandy, and are cultivated with oil-seeds, cotton and pulses. The term *māl* is used for the slopes which are terraced to catch the surface drainage coming down from the uplands. The lower terraces are wider and deeper than the upper, and cultivators carefully recognize the great difference in fertility and in security of cropping between them, even distinguishing seed varieties for *tikra māl* and *samān* (level) *māl*. The higher *māl* lands are light and dry, yielding light early crops, which receive little more attention than the chance crops on unembanked *āt* land. The lower *māl* lands, called *pita māl*, get excellent drainage and grow good varieties of rice. The term *bernā* denotes lands towards the bottom of a depression, which receive the drainage from the slopes on either side and also from the drainage line between them. *Bernā* lands vary considerably according to their steepness and the stage of their development. In land newly broken up they are liable to have sand and gravel washed into them, but where it is under close cultivation the embankments of the terraced slopes prevent this. *Bāhāl* is a term used for flat land at the bottom of a depression or drainage line; the chief distinction between *bernā* and *bāhāl* being that the former is narrow and steep, and the latter wide and all but level. There is also a considerable difference between a wide *bāhāl*, lying between long slopes and receiving ample

drainage from them, and a narrow *bahāl* lying between short steep slopes. Also, the best *bahāl* lands are served by the widest and largest irrigation reservoirs, and so are secure from crop failure.

Bāhāl, *bernā* and *māl* lands are, as a rule, under rice, for the wash of rain tends to bring a detritus of fertile silt down to them, while *āt* lands are used for other crops which are less dependent on moisture. Throughout the district there is more variation in the unembanked *āt* land, growing light miscellaneous crops, than in the rice land. Its soil in a closely cultivated tract is often little better than exhausted sand or gravel. In hilly wooded country it is more fertile, but its crops suffer from the depredations of wild animals. On the banks of the larger rivers it resembles good silt, but is subject to floods.

Two other classes of soil are those known as *khari* and *bāri*. *Khari* is a term used for land situated near the village site, which receives the drainage of its streets and the washings from its houses; such land, when under irrigation, is called *khari pāni*. *Bāri* denotes vegetable gardens, generally occupying high land close to the homesteads, which are enriched by the village drainage and can grow two or three valuable crops every year.

A further classification of soils is based on quality; but this is not so commonly recognized as that of position, which is the all-important factor in an undulating country such as Sambalpur. The cultivators themselves recognize five classes, viz., *barmatta*, *khallā*, *pandkapitā*, *rugri* and *bālā*. *Barmatta* means merely good soil, and is a mixture of clay and sand containing a large proportion of vegetable matter, its excellence being due to long tilth. *Khallā*, or clay, is a soil in which the bluish clay sub-soil of the district predominates. *Rugri* and *bālā* are equivalent to gravel and sand, and *pandkapitā*, or "dove's back colour," is a made soil consisting of clay brought up by the plough and of sand and gravel brought down by surface drainage. The soil last named is found in nine-tenths of the cultivated area.

RAIN-
FALL.

As no less than 72 per cent. of the cultivated area is under rice, water is a far more important factor than soil, and an ample and well-distributed rainfall is a matter of vital importance to the cultivators. The rains usually break in the second fortnight of June or early in July, and the rain of July is almost invariably heavy. August and September are the critical months, for though the cultivator can to a certain extent make up for a short or late rainfall by the use of tanks, the area fully protected by them is small and the lack of two inches of rain, or its delay by two days, may do great damage. The October showers are seldom heavy, and are

of importance only after a dry September to revive the rice of the bottom lands and to secure the pulses and oil-seeds. From October to January little or no rain falls, but it is usual to have some showers at the end of January or in February. These showers and the periodic rain storms of the hot weather months enable the cultivator to plough his land before sowing time.

As explained in Chapter I, there is a marked difference between the rainfall of the east and west of the district, the former having a heavier and also steadier rainfall than the latter. Serious shortage of rain has not been known to occur in the eastern *tahsil* nor in that part of Bargarh which lies within 20 miles of the Mahānadi. The northern part of the Bargarh *tahsil* also is fairly secure, probably owing to the neighbourhood of high hills. But all the south and west of the Bargarh plain and the zamindari of Borāsāmbār have repeatedly suffered.

In most years the amount of rainfall is sufficient, the average for the whole district being 58.49 inches, but it is often unevenly distributed, and deficiency in the critical months is fatal to the crops. To provide against its vicissitudes, artificial irrigation is absolutely necessary, and it is not too much to say that the very existence of villages over a large portion of the cultivated area is dependent on the tanks which have been constructed round them. Fortunately, artificial irrigation has been and is being well developed, no less than 112,545 acres being irrigable from tanks and wells in the *khālsa* area alone, as compared with 73,105 acres 20 years ago, representing an increase of 54 per cent. There are now 5,572 tanks in the *khālsa*, representing an average of nearly 3 tanks to every village, besides 8,116 wells, as against 3,616 tanks and 839 wells in 1889. The advance is most striking in the Bargarh *tahsil*, where tanks have increased from 1,697 to 2,965, and wells from 204 to 6,034. It is reported that 60 per cent. of the *bāhal* land, 30 per cent. of the *berā* land, and 12 per cent. of *mal* land is irrigated.

There is a great difference between the methods of irrigation practised by the Aghariā immigrants from Chhattisgarh, who have settled in the flatter riparian tracts to the north, and by the Oriyā Kultās, who prefer a comparatively undulating country. The Aghariā works only on rich soil, and this he finds in the level tracts which the Kultā avoids. The latter depends almost entirely on his water-supply, and likes rolling country with surface drainage and shallow sub-soil water. The Aghariā is a poor tank-builder, and constructs only the shallow square tank commonly used in Raipur and Bilāspur, which gathers no surface drainage, depends altogether on direct

rainfall, and fails in a year of short rainfall. One glance at a stretch of rice fields suffices to distinguish Kultā from Aghariā cultivation. The former builds only low and narrow banks between his fields, seldom more than two feet high, because he has frequently to cut them in order to pass his irrigation-water from plot to plot. The Aghariā builds high field boundaries, making a tank of each field, because each must catch and keep its rainfall. The two systems suit the tracts to which they are applied. In any ordinarily favourable year the Aghariā reaps the heavier crop, but in a bad year he loses more than the Kultā does.

Irrigation
from
tanks
Kātā.

There are three kinds of tanks in the district, viz., the *kātā*, *mundā* and *bāndh*, of which the following is a brief description. An ordinary irrigation tank, which is known as a *kātā*, is constructed by throwing a strong earthen embankment, slightly curved at either end, across a drainage line, so as to hold up an irregularly shaped sheet of water. The undulations of the country usually determine its shape as that of a long isosceles triangle of which the dam is the base. It commands a valley, the bottom of which is the *bāhāl* land and the sides of which are the *māl* terraces. As a rule, there is a cutting high up the slope near one end of the embankment. From this the water is led either by a small channel or *tāl*, or from field to field along the terraces, down which it finds its way to the lower land. In ordinary years irrigation may be entirely unnecessary, and in that case the superfluous water is passed along until it falls into the nullah in which the small valley ends. In years of short rainfall the centre of the tank is sometimes cut through, when the bottom lands need irrigation, but in ordinary years such an expedient would be dangerous, for the water is deepest at the centre and no sluices are used. Such tanks supply water to at least 5 acres and usually to an area of 30 to 200 acres.

Mundā.

The *mundā* is an embankment of smaller size across a drainage channel. Embankments of this sort are very common, as they can easily be constructed by the ryots themselves for the benefit of their own holdings. These men have perhaps a few fields commanded by the main village tank, but have built *mundās* to protect their outlying fields, more recently acquired from others or reclaimed from the waste. For its purpose the *mundā* is useful, for, if a failure of rain is not very serious, it may provide water enough in the later months of growth to save the crop. But it is necessarily shallow and cannot give a certain supply.

Bāndh.

The *bāndh* is a four-sided tank excavated below the *kātā*, from which it derives its water by percolation. They are almost invariably used for drinking purposes only, are properly regarded

as suitable monuments of piety or charity, and are invariably consecrated or married to a god. Apart from their obvious sanitary advantages, they add to the irrigated area by spreading percolation and by rendering it possible in years of drought to empty the irrigation tank completely without danger.

The construction of tanks is of such vital importance in this district that special concessions have been made to encourage it. Adminis-
tration of
tanks.

Land made irrigable by tank construction is secured against assessment at irrigated rates at the ensuing settlement; and, in addition to this, it has been ruled for ryotwari villages, under articles 390 and 402 of the Central Provinces Settlement Code, that a *gaontia* or ryot who makes a tank on his land is entitled to remission of the revenue on the area submerged from the date on which the tank is completed. The distribution of water from the public tanks has hitherto been left in the hands of the *panch* or village committee, and though this gives rise to much contention in a year of drought, no more impartial and expert agency is available. Such an arrangement is necessary, for it is impossible to state definitely for every year what blocks of fields should first be irrigated from the public tanks. This is a question which depends largely on the various conditions of each year's rainfall, on the state of each tank, and on the state of the crops.

As regards the maintenance of tanks, the Settlement Officer writes as follows:—

“At last settlement all the old tanks not constructed on the proprietary land of *gaontias* were regarded as public property and were recorded as the property of Government. This step, intended to prevent selfish or short-sighted misuse and encroachment, has probably been of real service. But encroachment on the beds of public tanks has been the rule rather than the exception. Many cases have come to light in which parts of the beds of the old tanks, temporarily cropped at last settlement, were then entered in private holdings. It has been found to be impossible to legally dispossess the encroachers, and, as they can now claim damages if their crops are submerged, many *gaontias* who wish to restore old tanks to their former level are deterred from doing so. The abuse is a result of the imperfect system of repair adopted by the villagers. As they have pressing need for irrigation only once or twice in eight or ten years, they do not annually repair embankments, but allow them to lose a few inches every year by the wash of rain, until the water-level has fallen two or three feet, when a subscription is called for and the earthwork made up. But in the intervening years, the falling water exposes round the upper edge of the tank a strip of rich

land into which the nearest cultivators are tempted to turn their ploughs, the *gaontia* himself being not infrequently a transgressor."

Wells.

Apart from tanks, the district has special irrigational advantages in the ease and cheapness with which wells can be sunk. Its sandy soil holds in most places a plentiful store of sub-soil water at no great depth (15 to 20 feet) from the surface, and a well which will last for several years can be sunk for Rs. 40 or Rs. 50. Such wells hold water through the hot weather and are largely used for the irrigation of sugarcane plots. Temporary wells are also sometimes used for the irrigation of rice in the tracts near the Mahanadi where water is found close to the surface.

Other means of irrigation are of little importance, but temporary dams are built across the Jangmār and Sursutia nullahs near Machidā, and across a nullah near Ghes, by means of which the water is diverted and carried into the fields. For raising water from a lower to a higher level the common lever lift called *tendā* is used. This consists of a long pole poised between two uprights and weighted at its lower end, and is used invariably whether water is required from a well or from a tank. Where there is only a small difference of level, baskets (*senā*) worked by two men are often used.

The following statement shows the normal acreage of each of the principal crops and its percentage to the normal net cropped area.

PRINCIPAL CROPS.

Crop.	Normal acreage.	Percentage on normal net cropped area.	Crop.	Normal acreage.	Percentage on normal net cropped area.
Winter rice ...	218,900	25	Autumn rice ...	406,700	47
Sugarcane ...	3,700	...	<i>Jowār</i> ...	700	...
Total <i>aghani</i> crops.	222,600	26	<i>Māndiā</i> ...	600	...
Wheat ...	100	...	Indian corn ...	2,100	...
Gram ...	100	...	Other <i>bhadoi</i> cereals and pulses.	114,800	13
Other <i>rabi</i> cereals and pulses.	3,200	...	Other <i>bhadoi</i> food-crops.	20,000	2
Other <i>rabi</i> food-crops.	2,900	...	<i>San</i> (hemp) ...	1,500	...
Linseed ...	400	...	Early cotton ...	8,000	1
Rape and mustard	500	...	<i>Til</i> (<i>bhadoi</i>) ...	83,200	10
Other oil-seeds ...	1,500	...	Other <i>bhadoi</i> non-food crops.	2,800	...
Tobacco ...	500	...	Total <i>bhadoi</i> crops.	639,900	74
Other <i>rabi</i> non-food crops.	200	...	Orchards and garden produce.	1,000	...
Total <i>rabi</i> crops	9,400	1	Twice-cropped area	6,000	1
Forest ...	534,838	61			

Rice is the staple crop of the district, occupying 82 and 81 per cent. respectively of the cropped area in the Bargarh and Sambalpur *khālsa* and 56 and 71 per cent. in the Bargarh and Sambalpur *zamindāris*. The low proportion in the Bargarh *zamindāris* is attributed to the fact that after the famine of 1900 the aboriginals substituted *kutki* (*Panicum psilopodium*), which ripens at the end of August and is not so dependent on the rainfall. This crop, however, is now again going out of fashion. In the Sambalpur *zamindāris* the area under rice has also fallen off slightly, because the aboriginal races have been driven from the lower lands and now cultivate *til* or sesamum largely.

The cultivators state that there are over 300 varieties of seed in use, and the Settlement Officer has been able to identify 100 different kinds; but it is rare to find more than thirty in any one village. The varieties are most simply classed by the position of the fields on which they grow most successfully, viz., as *bāhāl*, *bernā*, *māl* and *āt* rices. For example, a *bāhāl* variety will fail on upper *māl* terraces, and, on the other hand, *māl* varieties will rot in the wet *bāhāl*. These main classes are further subdivided into several minor groups. Among *bāhāl* rices *jhiliparāgi* and *chināmāl* need deep, well-cultivated, well-manured, and very wet land, while *kākudibijā* and *māliyā*, a most sturdy plant, will grow well at the bottom of any depression, and are commonly sown in the newly cleared land of jungle villages. Similarly, among *bernā* rices, *baulkerā* will grow only in the lower fields of a depression, while *tamdā* and *mugdhi* will do well on any *bernā* field. The lower terraces of *māl* land will grow some of the sturdier *bernā* varieties, but the favourite seeds are *hanko* and a large family of striped or barred seeds. The uplands and the upper terraces grow coarse grains, usually black-husked. The colour distinction is said to be a good one, so far as it goes, because most of the best varieties are white-husked; the *māl* rices, which form the bulk of the crop, are reddish; and the coarse upland varieties are black. Commercially, only two classes are generally recognized, viz., the finer varieties, which can be husked readily after sun-drying, and the coarser, which have to be first parboiled or steamed and then dried. These are known as *aruā* and *usnā* rice.

The greater part of the rice is sown broadcast, only 4 per cent. being transplanted, though the proportion rises as high as 8 per cent. in the Bargarh plain. As in other parts of India, there are three common ways of sowing broadcast—dry sowing just before the rains break (*khardi*), sowing after the rains have broken and the ground is wet (*batrī*), and sowing late with seed which has been previously germinated by soaking in water

Varities
of rice.

Methods
of culti-
vation.

(*achharā*). The following description of the methods of cultivation is reproduced from the Settlement Report.

Ploughing. The amount of ploughing done before sowing time depends largely on the method of cultivation which is to be adopted, but it is usual to plough up all fields at least once before the rains break in June. Harvesting finishes by the end of November,* and as soon as threshing is over, the cultivator ploughs up his *bāhāl* fields to turn in the stubble. But the *māl* terraces, reaped early in October, dry up and harden very quickly, and cannot be touched, unless, as is often the case, heavy showers fall in January or February. The bulk of the work is left for the hot summer months, when heavy storms of thunder and rain usually break once a fortnight, and give the cultivator his chance to plough. It is then too that manure is spread and worked in.

Khārāi. The method of sowing known as *khārāi* necessitates much preliminary ploughing, and is applied chiefly to bottom lands, which retain moisture long enough after harvest to admit of effective pulverisation. It can also be used on sandy upland soils, which soak readily after summer showers. The seed is sown broadcast a fortnight before the rains break, or usually at the beginning of June. If the coming of the monsoon is delayed, and mere showers fall, the seed germinates and dies. If the monsoon is ushered in with a heavy downpour, the seed is liable to be washed out, and this is one reason why the *khārāi* method cannot be employed on steep terraces. Its great advantages are that, if successful, it gives an early ripening crop, and it leaves the cultivator free for the sowing of his other land by other methods after heavy rain begins.

Batri. Of these the most popular is the *batri* method, because it is applicable to the *māl* fields, which constitute about 60 per cent. of the rice land. These bake after harvest to a brick-like hardness, and can be but lightly scratched until the monsoon has set in. They are then given a deeper ploughing* and the seed is sown at once, usually in the beginning of July.

Muka. The *muka* method may be applied to any embanked field, but most suitably to the lower plots of a *bernā* dell. These have been lightly ploughed beforehand; when the rain comes in earnest, they are flooded deeply, the plough is put through water and mud, and the seed is sown on the thin slush thus worked up. After two days the water is gently drained off.

Achharā. The *achharā* method is an elaboration of *muka*, which can be applied to all fields with good embankments in a low and

* Sometimes, in the case of low-lying *bāhāl* lands, it is not concluded till December.

level position. Pre-monsoon ploughing is unnecessary. On the first full fall of rain the fields are flooded, and the plough is put twice through the water and mud. Four or five days later the water is drained or scooped off, care being taken to leave no pools. The soft sediment is ploughed once more to break the remaining clods, and is then levelled with a board. Meanwhile, the seed has been germinated by being soaked in water for a day and a half, and then spread in baskets for another day. It is often put in by hand. If through carelessness any water has been left on the *achharā* field, the seed sown in this advanced condition will rot. It is necessary for success with both *muka* and *achharā* that the monsoon should be ushered in with heavy rain.

In the case of broadcast rice an important operation known *Bihurā*. as *bihurā* is necessary early in August, when the plants are about a foot high. It consists simply in running a light plough up and down the field, thus uprooting a large proportion of the plants and leaving the rest sticking loosely in the mud in all directions. The effect is to kill off weeds and aerate the soil, besides thinning the plants. It is necessary that there should be from 4 to 6 inches of water in the fields; and if there is not, the cultivator must either irrigate or wait through the long droughts that occur in this month until sufficiently heavy showers fall. The operation is calculated to hasten growth on a sandy soil and obviate the danger of a failure of the later rains. A crop thinned at an early date and then refreshed by light showers is secure; it will stand a long drought and yield a crop even if September be rainless. But if the first chance is missed and *bihurā* is not accomplished until late in August, any shortage of the September and October rain will ruin the crop.

No other operations, except weeding in August and irrigation *Harvest-* in bad seasons, are necessary until the crop is ripe. Cutting *ing.* begins early in September for the coarse rice of the uplands, and on the *māl* terraces it is usually finished in October. The heavier *berā* and *bāhāl* crops are reaped in November.*

Other cereals are not of much importance with the exception *Other* of millets, which are a favourite crop with the aboriginal races. *cereals.* Of these the most largely grown are *kodo* (*Paspalum scrobiculatum*) and *kutki* (*Panicum psilopodium*), small grass-like millets grown on uplands, which taken together occupy 34,773 acres. *Kodo* is sown broadcast in the beginning of July and ripens towards the end of October and in November. *Kutki*, which is

* In the case of low-lying *bāhāl* lands harvesting sometimes does not take place till December.

known locally as *gulji*, is a crop which ripens rapidly and can be out 60 days after it is sown. It is either sown at the breaking of the monsoon and reaped in August to get an early food supply, or is sown towards the end of August and harvested in October. The other cereals are not cultivated to any large extent. Wheat is raised on only 100 acres, but maize and *jowār* are common garden crops in the plots near homesteads. Maize of good quality is grown in Borāsāmbār, and there is a small quantity of *jowār*, which is the produce of some seed distributed five years ago in the hope that it would become popular as a fodder crop.

Pulses. Of the pulses grown in Sambalpur by far the most important are *urid*, locally called *bīrhū* (*Phaseolus radiatus*), and *mūng* (*Phaseolus Mungo*), which together account for 64,335 acres, and *kulthā* (*Dolichos biflorus*), which covers 35,395 acres. The two former are generally grown on uplands for which there is no manure to spare, while *mūng* is a common rotation crop with sugarcane. Among other pulses may be mentioned the lentil called *masūr* (*Ercum Lens*) and peas; the latter are the only second crop commonly grown, being sown in depressions before rice is out. Generally, however, pulses are raised on inferior high-lying land which receives no manure, and consequently the outturn is, as a rule, poor.

Oil-seeds. The oil-seeds of Sambalpur include *tīl*, linseed, mustard and castor. Of these the most important is *tīl* or sesamum, locally known as *rāsā*, grown on 90,457 acres. It is sown on uplands and is commonly the first crop taken from newly broken land, where it gives a large yield, but it is also grown on very poor soils. Of late years its cultivation has decreased in the Bargarh plain, where the uplands are exhausted, but has increased greatly in other parts of the district.

Sugar-cane. Next to rice, sugarcane is perhaps the most important crop grown in the district, for though the area which it covers is small, the value of its produce is very considerable. It is grown on two classes of land:—(1) on areas permanently appropriated for the purpose, so situated as to be easily irrigated from the village tanks, in which the villagers grow their cane together; and (2) on scattered plots situated in the holdings of individual ryots and watered by lift irrigation from wells. Such fields are known locally as *barchhā*. Of late years, however, the practice of villagers growing this crop on common land has been gradually disappearing, and in most cases it is laid out in the fields by individual tenants.

Sugarcane is grown, as a rule, not on special soils, but on any plot that can be easily irrigated. The principal varieties are

baugla, or Bengal, and *tandi*. The former is a thick juicy white cane, growing 9 or 10 feet high and yielding molasses of good quality and flavour. Until recent years it was grown everywhere, but lately it has been supplanted, especially in the Bargarh plain, by *tandi*, a thin, stringy and inferior cane. Its juice is sour and its yield poor, but it is not eaten by jackals, and is cheaply grown. Among the less popular kinds of sugarcane are the Bombay and *kaliā* varieties, which are frequently grown together, the latter protecting the former from the raids of jackals.

The cane is sown in March or April, and cut in December, January and February. It is pressed in primitive mills made of three rollers, the two outer rollers being geared into the middle roller, so as to move with it, but in the opposite direction. The mill is worked by two pairs of bullocks turn and turn about, and the loss of power by friction is very great. Pressing generally takes place between sunset and sunrise; and the groaning and creaking of the rollers can be heard throughout the length and breadth of the district during the cold weather nights. The juice is for the most part boiled in earthen pots, but iron pans are used in some places.

The following sketch of the history of sugarcane cultivation in Sambalpur is quoted from Mr. Dewar's Settlement Report :—
“ Before the railway came, the cultivation of cane ranked second only to that of rice, which it supplemented by providing work for farm-labourers throughout the spring and hot weather. There was then little export of grain, but *gur*, being a less bulky commodity, was one of the principal articles of trade. Each village grew all its cane in common on land provided by the headman in the proximity of the principal tank. The cost and labour of fencing were shared by all, and the crop was cheaply produced. But as soon as the railway was opened, outside competition checked the trade in *gur* and at the same time doubled the profits of rice. It had been customary, even in years of comparatively short rainfall, to conserve half of the water of the principal village tank for cane irrigation in the hot months. It now became more profitable to use all the available water on the rice crop. One other cause at work was the increasing scarcity of fencing material in the open tracts. Mud walls proved an inefficient protection against jackals, and even where cultivation continued, an inferior hard cane took the place of finer varieties. In the zamindāri villages, though these are exposed to damage by pig and bear, fencing material is abundant, and the decline of the area under good cane has been less marked. After 1899-1900 the first rush for rice profits was over, and the price of rice, much inflated by bad seasons in the

Central Provinces since 1895, became more steady. In some villages the cultivation of cane on the common land has been resumed, but in most cases the old custom has died out, and cultivators dig wells on their own holdings and work independent plots. Its expenses are heavy, but the crop provides for the consumption of the district, and in recent years the export of *gur* has recommenced on a small scale. It is not likely to develop rapidly unless there is some improvement in the present primitive methods of crushing the cane and of boiling down the juice."

Fibres.

Cotton is grown on 8,000 acres, but its cultivation is very much on the decrease. The crop still pays when grown on uplands rich in vegetable silt, but in the exhausted uplands of the open tracts it has gone out. It will not grow well without manure, and all the manure available, after providing fuel, is used on the rice fields and sugarcane gardens. Consequently, its cultivation is nowhere important except in Borāsāmbār and Lakhanpur, where the lower slopes of the forest-clad hills are rich in vegetable silt. The method of sowing cotton is peculiar, the seed being sown on the ridges, between the furrows made by the plough, and pressed into the soil with the foot. After germination the field is ploughed and cross-ploughed between the rows, so as to earth up the seedlings, each group of which stands on a little mound of its own.

The only other fibre crops are *san* hemp, which is a comparatively recent innovation, and *kauriā*. The latter is sown with sugarcane and reaped in November, and sometimes also is sown by itself on *barchhā* land. It is believed to protect the sugarcane from jackals, and a little *arhar* is also sown for the same purpose. Its fibre is more valuable than that of *san* hemp, and it grows on better land. There is this further distinction that Brāhmins and Kultās will not sow *san* hemp with their own hands, because it germinates so quickly, but any one may sow *kauriā*.

The tree cotton of Sambalpur is well-known, and there is a particularly fine variety growing in the Jail garden, mainly young plants of about a year's growth. Some samples of the latter have been examined by the Reporter on Economic Products to the Government of India, who found that the bolls were the bolls of Pernambuco cotton (*Gossypium brasiliense*) and that the value of the lint was very near that of Egyptian cotton. As regards its value for commercial purposes, it yields a strong staple from $1\frac{1}{2}$ to $1\frac{3}{4}$ inch long, and it possesses good spinning qualities, being said to be as good as American cotton.

Tobacco.

Tobacco has of late years become an important garden crop, its area having been nearly doubled in the last 10 years.

The light sandy soil of the district is most favourable for the growth of fruit trees, of which *mahuā* (*Bassia latifolia*) is not only the most common, but also the most important. Its flowers are of great value as a food to the people generally, and especially to the aboriginals, by whom they are dried in the sun and stored throughout the year. They are also used for fattening cattle and for making spirit, while the fruit produces a thick oil used by the poorer classes for lamps, as well as for the adulteration of *ghi*. Fine mango groves are to be seen in every part of the district, while the *tāl* palm and the *khajār*, or date palm, are common on the banks of tanks. They are cultivated for the sake of their fruit, the kernel of the former being used with rice flour for making cakes. The guava is cultivated on the banks of nullahs in many villages in the Bargarh plain, and the tamarind and jujube are fairly common. Other fruits, such as the orange, lemon, citron, plantain, pine-apple and rose-apple, grow well. Among European vegetables, cabbage, artichoke, asparagus, celery, beet-root, peas, mint, radishes and turnips can be grown successfully. Other garden crops include melons, water-melons, and various condiments and spices, such as chillies, coriander, etc.

Enquiries made in the course of the recent settlement shew that though the famine of 1900 seriously checked agricultural progress in the western tracts, yet in 15 years the area occupied for cultivation increased by 16 per cent., the cropped area by 6 or 7 per cent., the area under rice alone by 7 per cent., and the irrigable area in the *khālsa* by no less than 54 per cent. The largest increase in the cultivated area has occurred in the zamindaris, where extensive areas of cultivable waste land were available; but there has also been a marked progress in recent years in the Sambalpur *tahsil* owing to the introduction of the railway and its immunity from crop failure in 1899. The extension has been least in the Bargarh plain, where the land has long been under close tillage and other influences have also been at work to prevent further advance. Between 1880 and 1892 large areas of upland in the open plain, left bare by the deforestation that ensued on close cultivation, were cultivated with cotton, pulses, and oil-seeds. But lack of natural vegetation speedily exhausted the shallow soil, and when a sharp rise in the price of rice followed the opening of the railway, the tendency to concentrate upon rice land and to neglect the uplands grew strong and was confirmed by the short rainfall of 1899. On the other hand, the land that is now in regular cultivation is much more closely worked than in past years. All the rice land is cropped annually, and the best uplands are cropped at least every second year.

EXTENSION AND IMPROVEMENT OF CULTIVATION.

This change is partly due to natural causes, but has been hastened by the advent of railway communication. It no longer pays the cultivator to distribute his capital and labour over both rice and miscellaneous crops. Formerly he grew as chance-crops the oil-seeds, pulses, and cotton needed in his own household. But with rice cultivation paying over 100 per cent. on his outlay, he concentrates upon that and buys his other necessities more cheaply than he can grow them. The only exception to the rule that new fallows have decreased is in some of the eastern zamindaris, where forest land close to the railway has been opened up. These tracts are peopled chiefly by aboriginals, whose tendency is to clear new land frequently rather than to develop the fields already reclaimed from jungle.

As regards the prospects of future extension of cultivation, it is estimated that about 60 square miles of tree forest and 608 square miles of scrub-jungle are available for agricultural extension, but much of the latter is practically uncultivable. That the present rapid subjugation of waste land in the Sambalpur *tahsil* will continue for several years seems certain, but to the west of the Mahānadi there is not much more land to occupy except in the Borāsāmbār zamindari. The present tendency of cultivators being to concentrate upon the low lands growing rice and sugarcane, it is improbable that the sandy and gravelly uplands will be re-occupied until a hardy crop is introduced, which will grow with little or no manure on poor soil, and which will not require much ploughing.

It may be added that the famine of 1900 taught two lessons, viz., the need of extending irrigation tanks and of adopting a system of closer cultivation. There was scarcely a single *gaontia* in the famine-stricken tracts who did not double his desire for an irrigation tank and do his best to obtain it:—indeed, the *gaontia* who handled the money valued earth-work more than silver. The shortness of the grain supply, again, made the cultivators adopt a system of closer cultivation. They abandoned, for the time being, light and comparatively useless land, which they had been in the habit of scratching, and devoted their attention to the proper embanking of the better fields. They had no seed to waste, and consequently they were willing to abandon the wasteful system of broadcasting and *bihura*, and transplanted their rice wherever they could.

A District Agricultural Association has been in existence since 1903. Its members have made useful experiments with potatoes and ground-nuts, and there is some hope that these crops will become popular, as well as jute, which is being introduced in

Borāsāmbār for the first time by the zamīndār with the help of a trained cultivator from Cuttack. Experiments have also been made with wheat and cotton.

The cattle of the district are miserably poor and of small size; CATTLE, but fortunately heavy cattle are not required for the plough owing to the light sandy soil. For draught purposes larger animals are imported from Berār. The poverty of the cattle is due to the carelessness of the people about breeding and also to the want of nourishing food. For the greater part of the year the cattle are given no food by their owners; they are turned out each morning in charge of the village herdsman to pick up what they can, and it is only in the hot weather months that some rice straw is thrown before them when they return at nightfall. During the rainy season and cold weather they lie without food or litter all night. No fodder crop is grown, ensilage is unknown, and after the month of November the grazing grounds of the open tracts yield the minimum of fodder.

Buffaloes are largely used for cultivation, and frequently also for draught and for pressing oil and sugarcane. They are not bred locally to any great extent, but imported from the northern districts through Bilāspur and Sirguja. Those reared in the district are distinctly inferior in quality. Ponies are kept by the well-to-do for riding, but are scarce. Goats and sheep in small quantities are kept by the lower castes for food only, no use being made of the sheep's wool. Bhuktā near Ambābhonā is the largest cattle market in the district, and after it rank those of Bargarh and Talpatā. A veterinary dispensary was opened at Sambalpur in June 1906. The most common disease is rinderpest, which in 1906-07 caused 1,339 deaths. Cattle are exhibited annually at the Agricultural Show held formerly at Hūmā and now at Sambalpur.

CHAPTER VII.

NATURAL CALAMITIES.

FORMER
IMMU-
NITY FROM
FAMINE.

UNTIL the year 1900 Sambalpur was regarded as practically immune from famine, so much so that it was described in official reports as a "Garden of Eden" and a "Land of Promise." But, in spite of former plenty, failures of the crops are known to have occurred from time to time involving some distress and scarcity, at least in parts of the district. Early records show that there was such a failure in 1834, when, in spite of the prohibition of export, the price of rice rose as high as 8 to 10 seers per rupee. There was again scarcity in 1845, but after the latter year the price of rice remained steady at 54 seers per rupee. Subsequently, owing to unfavourable and deficient rainfall, it rose to the then abnormal figure of 16 seers per rupee both in 1865-66, the year of the great Orissa famine, and in 1877-78, when some scarcity followed a meagre harvest. In 1886 there was again a failure of the rice crop in some parts, prices rising to 19 seers to the rupee; and relief works were opened, but failed to attract labour. Through all these years, however, there was no general famine, though there must have been severe distress in the more remote and more jungly, less closely cultivated and less densely populated parts of the district.

FAMINE
OF 1897.

Even in 1897, when other parts of the country suffered from one of the worst famines of the 19th century, Sambalpur was scarcely affected. The outturn of the rice crop was fair, being 70 per cent. of an average crop, and good prices were obtained. Famine was declared only in a small area of 228 square miles with a population of 62,000, comprised in the Chandarpur and Mālkharodā zamindāris, which have since been transferred to the Central Provinces. In this area famine relief measures had to be undertaken; and in Borāsāmbār, where there had been a partial failure of the crops owing to the premature cessation of the monsoon, some relief work on roads was started by the estate. Elsewhere it was found sufficient to provide some work on tanks with the help of loans and private subscriptions. How little the district was affected by this famine may be realized from

Mr. Craddock's *Report on the Famine in the Central Provinces in 1896 and 1897*. "In Sambalpur, with a very fair rice crop, large exports and high prices, money poured into the district, and private charity amply sufficed to support the poor whom the high prices affected. A single road work was opened in April and continued till October, but this was chiefly intended to meet the needs of a corner of the district where the local crops had been poor and immigrants from Bilāspur were numerous. The numbers on this work only reached 2,200, and rapidly fell as the rains advanced." A further proof, if any is required, of the lightness of the famine is afforded by the fact that "a great many people from Bilāspur wandered over into Sambalpur, the land of plenty."

The first real famine, and hitherto the only famine, of Sambalpur was that of 1900,* which showed in a striking manner the dependence of the people on the rice crop and the danger of a premature cessation of the monsoon. In Borāsāmbār alone is there any considerable area under millets, and though the pulses called *mūng* and *kulthi* are grown all over the district, the area given up to them is comparatively insignificant. There is practically no *rabi* crop, and everything consequently depends on the rice. This failed in 1899-1900 owing to a badly distributed rainfall, and the district was involved in famine in spite of previous years of plenty. The outturn of the rice crop in 1895-96, *i.e.*, of the crop harvested at the end of 1895, had been 70 per cent., and in the preceding three years it had been 88 per cent. In 1896-97 there was a bumper crop, the average outturn being 120 per cent., but for other food-grains, *viz.*, pulse, *tīl* and sugarcane, the outturn was 45, 45 and 60 per cent., respectively. In 1897-98 the harvest was almost as good, the outturn of rice being 101 per cent., while there were full crops of *tīl*, etc.; and in 1898-99 rice had an outturn of 105 per cent. and the other crops were also good. Preceding circumstances could not well be more fortunate, except perhaps in the Borāsāmbār zamīndāri, where, however, the outturn was little short of a full crop.

On the whole, the rainfall of 1898 was sufficient, seasonable, and favourable to agriculture, and the earlier part of the monsoon of 1899 was well up to strength. The rains broke in the third week of June 1899 and continued with fair steadiness till the middle of August, the total rainfall up to the 19th August being 38·72 inches at Sambalpur and 30·93 inches at Bargarh.

* This account of the famine of 1900 has been compiled from the Deputy Commissioner's Final Famine Report.

After this, the monsoon current fell off in strength, yielding only light and unsatisfactory showers; but up to the end of the month there was no apprehension of famine, for some of the crops on the lighter *at* land had been reaped, and the prospects for the heavier lands were good. Indeed, it was reported at this time that there was no reason to suppose that any relief would be necessary. From the beginning of September, however, it became evident that unless there was heavy rain, the crops would suffer and distress ensue. These gloomy anticipations were fulfilled. In the first half of September there was a fall of 1.23 inches at Sambalpur and of 1.91 inches at Bargarh, and then the rain ceased altogether, giving a total of 45.51 inches in Sambalpur and 37.78 inches in Bargarh. This was not very much below the average for the Sambalpur *tahsil*, which consequently suffered least. In fact, had the earlier rain been more evenly distributed the loss of crops would have been slight; and as it was, tanks were filled early, and where they existed, they saved the crops on the heavy lands in October. The villages in the east and north of the Bargarh plain also were not so seriously affected, getting, as in the Sambalpur *tahsil*, half an average crop, but distress was very severe in the south-west, especially in Borāsāmbār. In the district, as a whole, there was a serious failure of the rice crop, the outturn of which was only 39 per cent. for transplanted and 45 per cent. for broadcast rice, while in Bijepur and Borāsāmbār it was almost an entire failure.

On the 22nd September the first step towards the organization of relief was taken, *patwāris* throughout the district being ordered to get village relief lists in readiness. It was not anticipated, however, that there would be a complete failure of crops in any tract, and it was therefore assumed that the labour required for the harvest would tide the labouring classes over October and November, so that actual relief operations would not begin until the month of December. This forecast proved to be practically correct, as will be apparent from the following table showing the progress of relief measures throughout the year. Briefly, there were five fairly distinct periods:—(1) November and December, when distress was being tested. (2) The general extension of relief with works and kitchens, which lasted till March, when cholera caused much disorganization, and when there was also a lightening of distress owing to the incoming of the *mahuā* harvest. (3) The hot weather period, when, by means of small village works and extended kitchens, relief was effectively organized in the face of cholera. (4) The fourth period showed a contraction of relief on works and a great extension of kitchen

relief. (5) The 5th was the period of contraction lasting from the middle of August till the end of October, when the district was practically in the same position as in December 1899.

Month.	No. of kitchens open.	No. relieved in kitchens.	No. of works open.	No. relieved on works.	Total no. relieved, including village relief.	Percent- age of popu- lation of famine tracts on relief.	Popula- tion.
November 1899	7	500	3	1,000	1,500	0.4	350,000
December	44	13,000	5	2,000	15,000	4.3	
January 1900	73	20,000	10	7,500	27,500	7.8	
February	82	20,000	10	9,000	29,000	8.3	
March	85	14,500	21	7,000	22,000	6.3	390,000
April	96	17,000	32	15,000	34,000	8.7	
May	102	19,000	32	18,000	30,000	10.0	
June	133	34,000	18	13,000	49,000	12.5	
July	163	61,000	8	13,000	77,000	19.7	430,000
August	231	84,000	4	5,000	93,000	21.6	
September	156	34,000	36,000	8.4	550,000
October	73	14,000	...	...	15,000	4.3
Average	104	27,500	12	7,500	36,500	9.7	390,000

As stated above, the district was scarcely affected by the Stocks, famine of 1896-97; but in that year and in the preceding year, owing to the scarcity in other districts and consequent high prices, all the available balance of grain stocks was exported, and the year 1897-98 was started with a much lower reserve than usual. But the crops of that year and of 1898-99 were excellent, and it is estimated that in September 1899 there was more than sufficient for a year's supply. In Borāsāmbār, however, the food stocks in the hands of *gaontīās* and ryots were very small after the beginning of 1900. Little grain was sold at the local markets, and in some tracts the labourers and smaller tenants depended upon supplies brought in by Cutchī *mahājans*. In Bijepur the majority of the *gaontīās* and many tenants had good stocks, but, being surrounded by a large population of Gāndās, they were in constant terror of being robbed, and hid their stocks carefully. It was not till the end of August, when crop prospects were assured, that they brought them out for sale. In the rest of the district, stocks in the hands of the cultivators were probably adequate, and those in the hands of the richer men were large.

Regarding the course of prices, the Deputy Commissioner wrote as follows in his final report on the famine:—"Sambalpur has been accustomed to have its staple food very cheap.

The normal rate of rice in Sambalpur is about 17 seers, but at Bargarh it is 20 seers, falling at harvest time so low as 22 and 24 seers; and in other less central parts of the district the prices are of course still lower. Small broken rice, cleaned off from the finer qualities, is to be had at 30 seers, and it is on this that many of the lowest class habitually live. It is then the less surprising that distress should have been acute in a formerly prosperous district, which even yet had large grain stocks locked up in the hands of its well-to-do residents, when prices ranged in out-of-the-way tracts from the normal 24 seers to 6 seers and even to 5 seers per rupee. In contrast with the ordinary usage, the more remote parts, where rice is usually cheapest, had the highest prices. They were farther from the stocks. Locally, *gaontias* and ryots who possessed stocks would not sell. Many could have parted with half their hoard quite safely and at a very high price. That they did not do so is due to two facts. They were afraid, by open selling, of drawing attention to the fact that they possessed stocks which could be looted. And again, so panic-stricken were the people by the failure of the 1899 crops, a disaster for which they had no precedent, that they kept in store all that they could in view of a second possible failure. So strong was the belief that the crop of 1900 would also be a failure that it was in some tracts difficult to get tenants to take *takani* loans for seed grain. They said that it would be lost and themselves burdened with the debt.

"Borāsāmbār was the most remote tract and therefore, in an ordinary year, the place of cheapest rice. This year (1900) in January, when in Sambalpur and Bargarh the price was 11 seers, it was $9\frac{1}{2}$ seers in Borāsāmbār. By the end of February prices had risen there to $8\frac{1}{2}$ seers, when in other parts they were 10 and 11 seers. By June when 10 seers was ruling in Sambalpur, and $9\frac{1}{2}$ seers at Bargarh, the Borāsāmbār price rose to $7\frac{1}{2}$, and again to $6\frac{1}{2}$ seers, which rate ruled steadily throughout July and August. From January to August 1900 the average prices were 9 seers in Sambalpur town, Bargarh and Bijepur, and $7\frac{1}{2}$ seers in Borāsāmbār. There was in all parts a gradual rise up to the month of August, and prices seem to have risen much higher than in either Raipur or Bilāspur, where 9 seers was considered a high rate.

"It was not until the end of August that the tension was relieved. By that time it was clear that the chances were in favour of a good harvest. Prices fell at headquarters from $8\frac{1}{2}$ to $11\frac{1}{2}$ seers and at Bargarh from $8\frac{1}{2}$ to $9\frac{1}{2}$ seers. In Borāsāmbār, owing to the harvesting of an early millet, prices fell at the same

date from 6 to 8 seers. After that there was some hesitation at Sambalpur itself, but in the district the fall was steady. At Bargarh prices went from $9\frac{1}{2}$ to 11 seers, from 11 to 13 seers. By the middle of October when harvesting had generally well begun, prices fell nearly to the normal, which, by the end of October, they attained.

"The course of prices seriously affected at sowing time even such cultivators as were not in need of relief. Ordinarily about Bargarh *dhān* seed grain sells at 2 *khandis* (40 *tāmbis* or 50 seers) per rupee. This year in Borāsāmbar and Bijepur its price was 15 *tāmbis* (about 18 seers). Large numbers of Borāsāmbar tenants, getting their *takāci* early, went into the Bargarh *khālsa* and bought their seed grain there. Nothing could better prove the depletion of food stocks in Borāsāmbar. By December a harvest had been got in, which probably represented at least 3,000,000 maunds of rice, but in the famine tracts the crop was little more than sufficient to furnish seed grain for the next sowing. The stocks which did exist, however, were held back, both by *gaontīās*, ryots and dealers, by the former two classes in view of what they considered a probable second failure of crops, and by the latter, partly for the same reason, and partly to be sure of getting the highest possible price for their grain."

Relief on works was mainly afforded not in the camps of the Public Works Department, which were never largely attended, but by works of considerable size managed by civil agency on the intermediate system, and by small village works managed by piece-work through the agency of *gaontīās*. This policy was rendered the more necessary by the continual presence of cholera for four months; but in any case it was found to be difficult or impossible to tempt the people, especially the aboriginals of Borāsāmbar, to any distance from their homes in order to obtain relief on large works. They were not educated in famine operations, and people in need of relief and capable of working were most reluctant to come to the works. Gradually, they gained confidence, but in March and April the extension of relief works was rendered most difficult by continual outbreaks of cholera and wholesale stampedes. These panics were frequently repeated throughout the year, though on a smaller scale and for much less cause. The result was that the aboriginals greatly preferred labour on *māḡuzārī* works near their homes, although they got much lower wages and did much more work—double the work, indeed, for those wages. But they were more familiar with the small tank-works run on their accustomed system of piece-work. In Bijepur again, the Gāndās, who were most in need of relief,

either thieved rather than take to honest work, or proceeded to qualify themselves for kitchen relief by remaining idle and in want of food until they were emaciated. Even when they came to the works, their outturn was conspicuously low and their manifold complaints conspicuously loud. The total number of units relieved by civil agency and *mālguzāri* works was 1,899,657 and by Public Works Department works 601,485.

Kitchens.

A reference to the previous table will shew the rate at which kitchens were opened. The food given was cooked rice and *dāl*, according to the prescribed scale of rations, but some deviations from rule were found to be necessary. The people on relief were accustomed to the plainest possible fare, and though even the moderate allowance of *dāl* that was served out was a luxury to them, it was not fully appreciated at first. They would not eat kedgeriee (*khichri*), or rice and *dāl* cooked together, for it was to them an unaccustomed dish. From the start rice (*bhāt*) had to be cooked separately, and this they ate first, reserving the *dāl* pottage as a tit-bit to be sucked up slowly afterwards. Even plain *bhāt* was objected to in the hot weather, because the people were accustomed to a dish called *pakhāl*, i.e., rice which has been parboiled and then steeped in a large quantity of cold water. So in the hot weather a half ration of *bhāt*, with the allowance of *dāl*, was served hot in the early morning, and in the evening the remaining half ration was given cold in the form of *pakhāl*.

There was a great deal of difficulty at first in inducing people, especially aboriginals, to accept cooked food. They were afraid to take help which, they imagined, would have to be paid for later in some way; and they were afraid of losing caste. This objection was gradually overcome. Care was taken to appoint as cooks only Brāhmins of the highest of the three Oriyā classes, and as watermen only Gauras. This met most objections, but the Binjhāls at first insisted that they could not eat from the hands of any Brāhman. They were then given a cook of their own caste, but later this was admitted to be unnecessary. The highest attendance at kitchens was 84,000 on the 18th of August. Altogether 9,780,291 units were relieved at a cost of Rs. 4,00,928-6-2 in food alone.

Mortality.

The mortality during the famine was exceptionally high, 74,107 deaths being recorded from 1st October 1899 to 30th September 1900, i.e., a death-rate of 93 per mille per annum on the last census population of 796,000. But there is some doubt about the figures, for the weekly returns shewed only 62,924 deaths, i.e., a death-rate of 79 per mille. A severe epidemic of cholera and small-pox accounted for 10,810 and 1,398 deaths

respectively; and excluding the latter, the rate is either 70·7 or 63·7 per mille. Even this, however, is unduly high, and the causes of the apparent divergence from a normal death-rate appear to be as follows. Firstly, the census figure of 796,000, as taken in 1891, did not represent the population of the district at the time of the famine, for there was a large increase due to immigration, which was greatest in the zamindāris constituting the famine tracts. The second cause lay in the migration of wanderers, among whom mortality* was very high. They had come long distances and were almost always in a most reduced state, some being mere skeletons. They had no houses to go, little or no shelter was available, and they were exposed to unusually wet and chilly weather. The third cause may be found in the unusual unhealthiness of climatic conditions. The rainfall was a record one, and it came in bursts, so that the weather alternated between extreme heat and considerable cold. A form of recurrent fever consequently broke out in what was practically epidemic form, accounting for 19,976 deaths out of the total of 74,107, i.e., 27 per cent. It was no respecter of persons; all officials suffered from it, and this seriously hampered relief work in August and September.

It was difficult, in the face of long previous prosperity, to believe that distress in Sambalpur would be real. It was real, and the explanation is that the appearance of prosperity is somewhat deceptive, for it is confined to certain rich parts of the district and to the higher classes. The standard of comfort moreover is low, a large proportion of the population consisting of aboriginals, and aboriginals do not save. Distress was consequently acute, and one striking illustration of its reality is that the merchants bought up at low prices thousands of brass *lotās* and *ginās*, two cart-loads of which were at one time being ferried over the Mahānadi to Sambalpur daily. Another illustration will be found in the figures of export and import, for Sambalpur exported foolishly, and had to re-import inferior rice in equal quantities later in the year.

When famine did come, the former immunity was a hindrance to relief, the cheapness and profusion of former years having unfitted the people to contend with scarcity. On the one hand, the village officials and those that were too well-to-do to be seriously affected gave no help to relief operations; indeed, a stubborn opposition was frequently raised by those who ought to have helped, and who probably would have helped if they had had previous experience of famine. On the other hand, the poorer classes who needed relief were uneducated in famine programmes, and

Attitude
of the
people.

had to be encouraged and instructed before they were able or willing to accept the relief open to them. This was especially the case in Bijepur and Borāsāmbār. In the former charge the lower classes consist largely of Gāndās, and the Gāndā is by nature and habit a thief, and, failing that, a beggar. They were willing enough to avail themselves of the kitchens both for themselves and for their children, but they would not, if it could be avoided, attend a relief work. Their prejudices are against work, and when turned out of kitchens as able-bodied, they took to thieving.

In Borāsāmbār the majority of the people were aboriginals, Binjhāls, Gonds and Khonds, and the difficulty of dealing effectively with them may be gathered from the previous account. In spite of the discomfort of the rains, the heavy tasks and rigorous fines, large numbers preferred relief on works to the alternative of gratuitous relief of any kind and, in particular, of kitchen relief. The Binjhāls were especially reluctant to come to the kitchens at the beginning of relief operations, chiefly because they were convinced that they would either be deported to Assam or somehow made to pay for the relief later by service being exacted from them.

In the case of village *chaukidārs*, the giving of village relief was understood, for they were Government servants. But with the rest of the people there was always an uncomfortable impression, which could not be eradicated, that the acceptance of money-doles would pledge them to some kind of future service. Generally speaking, the attitude of the people towards relief measures was one of extreme shyness, except among the Bijepur Gāndās, who were sly of work only.

General
conditions.

In conclusion, the following remarks of the Settlement Officer, Mr. Dewar, may be quoted as showing the economic revolution due to the introduction of the railway and the way in which it affected the people during this famine. After explaining that formerly the district was a landlocked home of cheapness, and that rice stayed in the district because it could not get out, he writes :—"Circumstances were altered by the completion of the main Bengal-Nāgpur Railway line in 1890 and of the branch line to Sambalpur in 1894. The price of rice at once began to rise towards its level in outside districts. For many years the opening of the country brought with it nothing but progress and increased prosperity. There were fair or good harvests, the small cultivator stored grain or sold it at high rates, the labourer found work and was paid in grain. The large landowners and tenants made big profits and were able to build tanks, extend their cultivation, and still save.

"But it was another matter when in 1899 the rice crop failed over all the western and south-western part of the district. The smaller cultivators had lost all their crop even in villages where the richer men, using the irrigation tanks, saved half a harvest. The small cultivator soon had to buy. The farm-hand thrown out of employment, the day-labourer and the artisan, had to buy. But a price of 16 seers, formerly considered a scarcity price, had now become the normal rate, and, when that rose to 12 or 10 seers, famine conditions were well established. Meanwhile, the richer men, attracted by the previously unequalled price, had sold for export much too early, and most of the surplus grain had left the district. Later, even in the stricken tracts, there were still large stocks, but the *gacniās* and tenants who held them, conscious of their first mistake and remembering also that in the past bad seasons had run in pairs, held back and lost their second opportunity.

"The climax was reached in August 1900, when no faith could be put in the coming harvest, because weather conditions seemed to threaten a second failure. Matters were at their worst in the remote western zamindāris. Here, only fifteen years before, a normal price after an ordinary harvest had been 70 to 80 seers. It went to 6 seers in August 1900. Rice had been rushed out on the railway in October, November, December and January. Ton for ton an exactly equal amount had from April to August to be railed and carted back, inferior grain at a doubled price. The financial loss fell upon the labouring classes, on the small cultivators, who were chiefly aborigines, and on Government. The rich cultivators missed most of the profit which they might have made had they understood the new conditions that the railway had brought with it. The only gainers were a dozen traders, the railway company, and the agents who exported labour to Assam.

"One most noteworthy feature of famine work in the later months was the difficulty of redistributing grain throughout the district to tracts where local supplies were exhausted or were being held back. To drain the rice out of the district had been easy. It had been brought to trading centres in head-loads over village paths. It could not be redistributed in the same way, partly because private trade was paralysed, and partly because the people who carried it were, when it came back, in famine-kitchens or on works. Even had they been available, they could not have bought it, and they could no longer have been trusted as hired carriers. It had to be carted over a district which had but few cart roads. After the rains broke in June, even the main road to Raipur was

frequently blocked by recurrent floods and the village tracks were impassable. The best of rice does not travel well in rainy weather on open carts, and much of the reimported grain fermented and became unfit for consumption.

"That short rainfalls will again occur and produce crop failures in at least the western half of the district is quite certain. It may be confidently hoped that, in future, the richer agriculturists will understand better the altered range of prices, and will benefit both themselves and the district by holding back stocks for local sale. It is also to be hoped that there will not again be a large influx of starving wanderers from the States and from other British districts. But in any case road-improvement is a necessity, and it would be advisable also to extend the railway so that it will be able to feed the district as well as to drain it."

CHAPTER VIII.

RENTS, WAGES AND PRICES.

Economic rents are practically non-existent in Sambalpur, the Rents in rents of all classes of tenants except sub-tenants being fixed by *Khalsa*. the Settlement Officer at the periodical revision of the land revenue. They are not competitive rents, and they represent a minute fraction of the actual produce.

The first regular settlement was carried out in 1876, but the assessments were based on areas estimated according to the amount of seed stated to be sown, and the results were consequently nothing more than a mere approximation. This settlement was made for 12 years. On its expiry, the whole of the *khalsa* area (*i.e.*, land not belonging to Feudatory States or included in feudal zamindāris) was cadastrally surveyed and the reassessment of land revenue conducted on ryotwāri principles, as the tenants all enjoyed the occupancy status and the law necessitated the fixation of rents in detail. This was a work of some magnitude and of no small difficulty carried out between 1885 and 1889. Nearly six million fields had to be surveyed, and the task of enhancing rents was complicated by the absence of any reliable statistics shewing the increase in cultivation which had taken place since the last settlement. Prices stood very much as they did 20 years before, and the grounds on which enhancement was effected were the extreme lowness and inequality of the ryoti payments, the incidence of which ranged in different groups from annas 9-2 to annas 1-2 per cultivated acre. The all-round rate for the district was as low as annas 3-8 per acre and represented only 3 to 4 per cent. of the average value of the produce. The operations, therefore, consisted in raising the payments of villages where the rate was inadequate, to that already attained in areas of similar character. The opportunity was also taken to level up the payments of individual cultivators, where they were inadequate owing to the extension of holdings by the absorption of new land or for other reasons. The net result was that the ryot's payments were enhanced by 35 per cent., but the rate per acre for the whole district did not exceed annas 5-5, and in only two groups, containing the richest land in the district, did the rent-rate fixed exceed 8 annas.

Owing to the low pitch of the rents imposed, the settlement of 1885-89 was sanctioned for only 14 years, expiring in 1902-03. During its currency the district passed through what may almost be described as an economic revolution, mainly owing to the introduction of the railway. In spite of the check caused by the famine of 1900, the area occupied for cultivation increased by 16 per cent. and the cropped area by 7 per cent. The price of agricultural produce is estimated to have risen by 100 per cent., while the market value of agricultural land was more than doubled. These circumstances justified a large enhancement of rents, but it was not known till settlement operations were in progress how greatly conditions had altered; and the losses caused by the famine led Government to direct that an increase of only 30 per cent. should be aimed at.

The resettlement resulted in an enhancement of 31 per cent. for the whole *khālsa* area, the rents of the Sambalpur *tahsil* being raised by 32 per cent. and those of Bargarh by 29 per cent.* It was found that the average rate of rent imposed at the settlement of 1885-89 had fallen from annas 5-5 to annas 4-10 per acre, owing to the addition of new unrented land. By the revision it was increased to annas 6-4 for the whole area, the average being annas 6-7 in the Sambalpur *tahsil* and annas 6-1 in the Bargarh *tahsil*. The lowest rates imposed over all the groups of villages were annas 2-9 in Lakhanpur, which is a remote tract of hills and forests, and 4 annas in Kurkutta, another remote group, which was severely affected in the famine of 1900. The highest rates were annas 8-5 and annas 8-3, respectively, in Remendā and Tāmparsarā, the richest and more closely cultivated parts of the Bargarh *tahsil*, and annas 10-5 and annas 7-8, respectively, in the Sambalpur and Talab groups, which most closely adjoin the headquarters town and the railway terminus. How light the average rental is may be realized from the fact that it does not amount to 5 per cent. of the net profits of cultivation.

The marginal table shews the average rent rates imposed for each class of soil at this settlement.

		Rs.	As.	P.
<i>Bāhāl</i>	...	1	1	4
<i>Bernā</i>	...	0	11	4
<i>Māl</i>	...	0	6	3
<i>At</i>	...	0	1	4
<i>Barohā</i>	...	1	8	4
<i>Bārī</i>	...	0	13	6

The meanings of the terms used have been explained in Chapter VI, but for facility of reference it may be mentioned that, speaking broadly, *bāhāl* is flat land lying along a depression, *bernā* is land at

* The revised revenue of the *khālsa* and eight zamindāris was collected from 1905-06, and of the remaining zamindāris from 1906-07.

the bottom of a slope, and *māl* is land higher up the slope. *Āt* is high-lying land on a watershed, *barchhā* is a term used for sugarcane fields, and *bāri* denotes vegetable gardens. At the last settlement the first three kinds of soil, which comprise the rice lands, were subdivided into 22 different classes, *āt* and *barchhā* land into 2 classes each, and *bāri* land into 4 classes. *Bāhāl* soil and *bernā* soil were subdivided into two groups, viz., *bāhāl* I and *bāhāl* II, *bernā* I and *bernā* II; and each of these was further classified under four heads, viz., (1) *khari-pāni*, (2) *khari*, (3) *pāni*, and (4) ordinary. *Māsamān* land was classified under the same four heads, and so was *bāri* land; while *āt* land and *barchhā* land were each subdivided into two classes, *khari* and ordinary.

The system of assessment of rents in Sambalpur is entirely different to that followed in other parts of Bengal. This system, which was introduced at the settlement of 1885-89, and has been adopted *mutatis mutandis* in other settlements in the Central Provinces, is described in detail in the settlement reports, but briefly its main features are as follows. Its chief principle is that the rental of the previous settlement being taken as a standard, enhancements are based on the increase in the prices of produce or extension of cultivation according to a general rate previously determined. The settlement is preceded by an accurate cadastral survey and a detailed record for each field in the village of tenures, rent and character of cultivation. Besides this, a list is drawn up for every field showing its position according to the irrigation or drainage it receives and according to its productive capacity. The comparative value of the various soils having been ascertained, the result is recorded in terms of a common unit known as the 'soil-unit.' The incidence of the existing rent on this unit in each village is then checked by a comparison with the incidence in other villages and by an examination of past enhancements and the rise of prices; and on these considerations is based a standard unit for each group of villages.

The unit is then modified for each village according to local circumstances; and when the village unit is applied to the various soil areas contained in each holding of the village, the result represents, for each holding and for the aggregate of holdings, the standard rental which can fairly be demanded. This is modified, where necessary, in each holding with reference to the present rent and any other special circumstances; but the rent already paid for a holding is not lowered at the time of revision merely because it is in excess of the deduced rent. The system, which is known as the "soil-unit system," involves detailed enquiries in the field to ascertain the relative productiveness of different classes of

land; and in order to arrive at a correct valuation, it is the practice in Sambalpur to make careful calculations of their net profits.

Produce
rents.

The custom of paying rents in kind is of no importance in Sambalpur, as the policy of Government has always been to commute all such rents into cash. Produce rents are, however, paid by sub-tenants under what is known as the *bhāgel* system, under which half the gross produce is handed over to the lessor. Usually the lessor provides half the seed required for cultivation and pays the full rent of the holding, while the lessee uses his own bullocks and bears the cost of cultivation. When the crop is reaped, the gross produce is divided in equal shares.

RENTS IN
ZAMIN-
DARIS.

At the settlement of 1885-89, a survey and land valuation were carried out only in the Chandarpur-Padampur *tā uks* and the Malkharodā *jāgir*, which have now been transferred to the Central Provinces. In the zamindāris no regular settlement of tenants' rents was undertaken, but the rents actually paid for the land under cultivation were accurately ascertained, and in most cases where produce rents existed, they were commuted into cash rents. At the settlement recently concluded the rents were fully revised in three different ways. (1) In the case of the zamindāris in the Bargarh plain, viz., Burpali, Bijepur, Ghes, Bheran, Kharsal, Pahārsirgīrā, Mandomahāl and Pātkulandā, the *khālsa* system of land valuation and assessment was applied, as these estates lie in or close to the open plain and are almost as closely cultivated as the neighbouring *khālsa* tracts. The result was to raise the rent rate from 3 annas 10 pies to 5 annas per acre. (2 and 3) In the Borāsāmbār estate two different methods of assessment were adopted. In the eastern portion lying in the Ang valley, which is well cultivated, a method of assessment based on a simple scale of classes and values was employed. In the more backward and remote villages a summary settlement was made. It was decided that no elaborate classification of the land of tenants should be undertaken, that existing rents for old land should be accurately ascertained but not enhanced, and that only on land newly broken since the completion of the survey should new rents be imposed, calculated at the average acre rate already being paid in each village. The result was an average assessment of only 2 annas per acre for the tenancy area.

In the seven zamindāris of the Sambalpur *tahsil*, viz., Kolābirā, Rāmpur, Rājpur, Kodābagā, Machidā, Lairā and Loisingh, the method of assessment followed in the open part of Borāsāmbār was adopted, and the produce rents in vogue were commuted, the average rent rate per acre imposed being only annas 3-9 per acre.

Wages, whether for skilled or for unskilled labour, are still mostly paid in kind. The village blacksmith is paid a *tāmbi** of rice for mending a plough-share or preparing a sickle, and the same quantity of paddy for sharpening four plough-shares. The washerman is given a *khandi** of paddy in the case of each adult and 10 *tāmbis* for each boy or girl as his yearly wage, besides food on the days when he is given clothes to wash, and special fees on births, deaths and marriages. The barber is similarly remunerated in kind, getting one *khandi* of paddy per annum for a man and 10 *tāmbis* for an unmarried boy. In some cases, however, these village servants hold service lands. Carpenters are very few in number, the ryots usually doing their own rough wood-work themselves or getting it done by their farm labourers. Even in the town of Sambalpur there are not more than a dozen carpenters: and they have little skill or training. Unskilled labour is, as a rule, and field labour invariably, paid in kind, the wages being so many of the small *tāmbis* equivalent to 15 chittacks.

Owing to the rise of the price of rice, the wages of an ordinary day-labourer have risen from 2 annas to $2\frac{1}{2}$ annas a day; and in 1908, owing to the further rise in the price of food-grains, the wages of adult labourers increased to 3 annas per diem. Professional diggers receive $2\frac{1}{2}$ annas a day, which is also the daily wage paid to road coolies working in the town of Sambalpur and its vicinity. The Kurās, however, seldom work as coolies paid by the day, but generally undertake earthwork on contract at the rate of 420 to 480 cubic feet per rupee. Formerly, when food-grains were cheap, they used to be paid in grain, receiving a *khandi* of paddy (calculated on the scale of *bhuti tāmbis*) instead of a rupee in cash. Now, the price of grain has risen so much, that it would scarcely pay the owner of the land to give wages in paddy for earth-work.

Agricultural labourers are of two kinds, the *bhutiār* or day-labourer and the *guti* or farm servant. The *bhutiār* is paid at the rate of $1\frac{1}{2}$ *tāmbis* for an ordinary spell (*bel*) of labour, but 2 *tāmbis* for a spell of harvest labour and 5 *tāmbis* overtime wage for a night's threshing. The *bel* is a half day's spell during the ploughing season, for the condition of the plough-cattle is so poor, that they cannot be worked, at least in the hot weather, for more than five hours at a time. Consequently, the ploughman

* A *khandi* is equal to 20 *tāmbis*, of which there are two kinds, (1) the *bhuti* and (2) the *lakshmi-prashād*. A *bhuti tāmbi* of paddy weighs 15 chittacks and a *lakshmi-prashād tāmbi* 1 seer and 6 chittacks. Labourers are always paid in *bhuti tāmbis*.

usually works for one spell only. Women, who are usually employed on transplanting and weeding, also work only in the morning. At harvest time, however, and for all work for which oxen are not required the field labourer works both morning and afternoon, his full day's wage being equal to about $1\frac{1}{2}$ seers of husked rice.

The above is an utilitarian explanation of the practice, which the villagers themselves base on religious grounds. As mentioned in Chapter III, a *pūjā* called *kādobisti* (*kādo varishta*) is performed by the villagers during the month of Śrāban, at which offerings are made to the Grām Devatā. After this ceremony the labourers work in the fields both morning and evening. Before it is performed, no field labourer will work after he has taken his midday meal, but he can work for the whole day if he is content to forego that meal.

Farm servants, called *gutis*, are generally hired by the year and receive a monthly wage of three *khandis* of paddy, i.e., $56\frac{1}{2}$ seers, and also a bonus at harvest time of 3 *purugs* of paddy, i.e., 450 seers. In the case of an old and trusted farm-servant, it is usual for his master to allow him, instead of this bonus, the cultivation of two plots of land, in the uplands and lowlands, with an area of about one acre. As he is allowed to use his master's cattle, this privilege adds considerably to his annual earnings, which are frequently sufficient to allow him to acquire small plots of tenancy lands in his own right. The *guti* also has a number of other emoluments. In the hot weather his master presents him with a cloth to protect his head from the sun. On special occasions, such as a birth, death or marriage, he is entitled to receive a loan of from Rs. 5 to Rs. 10, which is free of interest and is deducted from his harvest bonus. If sugarcane, pulses or oil-seeds are grown, he is allowed a small quantity from each crop in addition to his rice-land bonus. If he threshes on moonlight nights at harvest time, he is given an overtime wage at the end of threshing, the occasion being called *kalācharāni*, i.e., the leaving of the threshing floor. At the end of the harvest too the last load—a specially heavy one—is his, if he can stagger with it to his own threshold without falling. The latter practice varies, however, for in some villages the *gutis* get a bundle each, in others one between them.

The overtime wage above mentioned consists of all the grain blown off with the husks during winnowing, besides one *kulā* (winnowing-fan) full of paddy per *mādan*. It may be explained that a stack of grain, estimated to yield 6 *purugs* of paddy, is usually spread out on the threshing yard at a time, and this is

called a *mādan*. For threshing one *mādan* at least three men are required to work alternately, each for about three hours, from 9 p.m. till early morning. After daybreak all three work together. If, however, a cultivator has more than three field servants, they all attend and divide the night's work between them. To thresh a *mādan* of paddy, 8 to 10 bullocks are required, and these are driven by each man for about 3 hours at a time. At sunrise all the straw is carefully removed, and the grain is stacked round the pole in the centre of the threshing floor. Then winnowing begins, the grain being allowed to fall from the *sūp* or winnowing-fan and then fanned. After the winnowing is over—a task which takes 3 men about 6 hours for one *mādan*—all the husks are collected and are further winnowed by the field servants. The husks yield about 25 *tāmbis* of paddy per *mādan*, and this quantity is the perquisite of the field servants. It is further supplemented by one *sūp* of paddy per *mādan*, i.e., about 5 *tāmbis*. The latter allowance is called *liakhiā*, and the former *pol*. Thus, for each *mādan* the field servants receive about 30 *tāmbis* of paddy per night. The wives of the *gulis* are bound to *tip* the threshing floor after every third threshing, i.e., plaster it afresh with cowdung and earth. For this work they get no wages, and if they refuse to work, their husbands forfeit half the allowance of *pol*. It is obvious that the larger the number of field servants, the smaller are their earnings for overtime work, but they can make more if the output of paddy is large. Speaking generally, it may be estimated that the average wage for overtime work is 5 *tāmbis* per head a night. Occasionally the amount is fixed by contract, the usual rate being 2 *khandis* per annum for each *guti*.

On engaging a *guti*, it is a common practice to give him a few rupees as earnest money, which he has to pay back without interest when his service is over. If, however, he throws up the situation, interest is charged at 50 per cent.; and this has the effect of rendering the service of most *gulis* practically permanent.

Another class of labourer is known as a *kuthiā*, i.e., a boy or old man who is not equal to as much work as a full-grown adult. A labourer of this class is paid according to agreement, sometimes at the rate of 2 *khandis* a month. In the Bargarh *tahsil*, a *kuthiā* is a boy who is kept in the house, and is given his food and clothes and a present at the end of the year.

Until the district was opened up by the railway, prices were PRICES. very low, as was only to be expected in a land-locked tract with little or no means of exporting its surplus. Since the advent

of the railway, the prices of agricultural produce have been doubled. Twenty years ago, the price of rice in Sambalpur town frequently fell to 40 and 50 seers over a year's average, and in outlying villages it could be had at 80 seers. Three years ago it was reported that in Sambalpur the price never fell below 20 seers, that the lowest rate in the villages was 25 seers, while the average price in the Bargarh market was usually 2 seers cheaper than in Sambalpur. Since then the price has risen to 12 seers at Sambalpur and 15 seers in the interior; while in 1908, owing to a short crop locally and a heavy demand from outside, rice has been selling at about 8 seers per rupee in Sambalpur and 9 seers at Bargarh. The same upward tendency is equally marked in the case of other products. For example, the price of *til* before railway export became possible was seldom less than 20 seers. In 1887, it was reported that the average rate was 17 seers, whereas the average for the 10 years ending 1901-02 was 11 seers. The wholesale price of pulses has similarly risen from 24 to 12 seers, and the price of *gur* from 15 to 18 seers.

MATERIAL
CONDI-
TION OF
THE
PEOPLE.

Mr. Nethersole, writing in 1887, gave the following sketch of the material condition of the people. "Under normal conditions far more rice is produced than is required for the food of the population, and any one who chooses to work hard has hitherto had little difficulty in maintaining himself and his family in relative comfort. Rice, which is the staple food, has been ordinarily very cheap, and a few days' labour has been sufficient to earn a stock of food for a much longer period. The people are by nature indolent, and are well content to remain idle, except at certain seasons of the year when they know they must sow and transplant their rice, and to make but little effort to improve their land in the intervals. The people of the district generally, though capable of steady and sustained labour and of forming habits of frugality, are not naturally inclined thereto, and I believe this is to a great extent because the food supply has hitherto been, as a rule, so plentiful and easily procured that they have not been forced to exert themselves. It is obvious that, without previous exertion, there could be no accumulation of capital in the Garden of Eden itself." At the same time, he was of opinion that probably more than half of the cultivators were more or less in debt, but under normal conditions there was not widespread poverty or distress of a chronic character among them.

In some respects there has been little change during the last 20 years, for the Deputy Commissioner reports:—"A trait of many of the people of Sambalpur, especially among the

lower classes, is their lack of energy. They would rather spend a day in collecting food in the jungle than in working in the field; and, if they earn a little money, their chief desire is to sit idle until they have spent it." Among the more advanced cultivators, however, signal changes are noticeable, which are described as follows by Mr. Dewar, who carried out the settlement of 1906.

"Descriptions given by Mr. Nethersole represent the Sambalpur cultivator as an indolent person living with much simple comfort in patriarchal village communities. No man was rich except in grain, and no man was distressingly poor because the food-supply was cheap and abundant. The opening of railway communication has changed these conditions. The increased cost of food has enforced greater industry on the labourer and the poorer cultivator, and the opportunity of trade and profit has tempted the richer and more industrious to greater effort. The demand for land has become keener, and its cultivation closer and better. With this progress there has come some gradual breaking up of the communal life, and in a few cases an undesirable accumulation of land and of capital in the hands of money-lenders. But the essential purposes of village life are still well served, and even the money-lenders are still agriculturists. The main result hitherto of the stirring up of individual competition has been the establishment of a very large class of substantial cultivators, by habit thrifty and industrious, with adequate holdings, good stock, and savings sufficient to allow of independent improvement and extension. The distinction between such men and the lower class of semi-aboriginals with debts and small holdings is much more clearly marked than formerly. At the last settlement Mr. Nethersole noted the gulf fixed between the *gaontias* and the ryots. But there are now three distinct classes above the rank of labourer, and the upper class of the ryots is not far below the landlords in prosperity.

"The standard of comfort has not conspicuously altered. The food, furniture and clothing of the average villager are very much the same now as in 1888. There has been no increase of outlay on religious or domestic festivals. But when substantial comfort has been attained, the refusal of luxury is not to be deplored. The people themselves, when asked to point out their changes, have usually explained that the old living has not changed, but is shared now by more families. Thus, though all still eat rice and vegetables only, more people now grow and eat fine rice. All still wear the old simple

clothing, but more now wear *bhuliā* cloths of fine quality. There are more tiled roofs and brick walls in the villages and bigger gardens, and more women are able to wear silver and gold ornaments. To this I may add that the old comfortable standard has been extended over considerable tracts formerly held by aborigines living poorly in leaf huts, and that hundreds of villages have substantially added to their health and comfort by building special drinking tanks."

Zamindārs.

The most important of the different classes which make up the community are the feudal zamindārs. Some, however, of the estates are much too small to support a landlord in any dignity, and their Gond zamindārs are of much less importance than many *gaontīās* in the *khālsa*; while two of the larger estates, viz., Barpali and Kolābirā, as well as Lairā and Garh Loisingh, are, owing to the indebtedness of their owners, under the management of the Court of Wards. The Rājput, Gond and Binjhal chiefs of fighting and freebooting lineage have been slow to turn to the pursuits of peace. They are handicapped by the necessity, real or supposed, of maintaining the remnants of an ancient dignity. In the past their management has usually been careless and often short-sighted, and it has been the policy of Government to resume from them, on payment of compensation, as many as possible of their powers of internal management.

Tenants.

The ryots are on the whole well-to-do, for, exclusive of small plots held as gardens, the average tenancy holding is now about 13 acres in extent, while in the zamindāris, where land is less closely cultivated and joint families more common, the average area is 19 acres. This prosperity is largely due to the lightness of the rental, for the average rent paid is only about Rs. 3-8. Altogether 9 per cent. (12 per cent. in the *khālsa* and 5½ per cent. in the zamindāris) are well-to-do tenants, who have large holdings, even when they are not also proprietors. The most important members of this class are the *gaontīās*, whose home-farms usually consist of the best land of each village and are held rent-free. Enquiry has shewn that 83 per cent. of them are either affluent or entirely free from debt. A few, however, are heavily indebted, mostly Brāhmans who have multiplied in numbers and subdivided their original grants without adding to them.

The second class of ryots includes the substantial tenants, many of whom have recently extended their holdings, and all of whom have good stock and either no debts at all or very light ones. This class accounts for 40 per cent. of the ryots, and the average holding is 19 acres in the Bargarh *tahsil* and 15½ acres

in the Sambalpur *tahsil*. The third class consists of those ryots who are moderately well off, having debts but no mortgage on or any particular risk of losing their holdings. They account for another 40 per cent. of the tenants, and include those semi-aboriginals who have failed to extend their holdings since the last settlement, but are content to carry on with small stock and moderate debts. The holding of a ryot of this class averages $9\frac{1}{2}$ acres in Bargarh and 7 acres in Sambalpur *tahsil*. His money debt averages Rs. 17 and his grain debt $2\frac{1}{2}$ *purugs*, worth about Rs. 13. As the market value of his land alone is seldom less than Rs. 100, he is sufficiently solvent, but he has little margin for the accidents of famine, cattle-disease, or deaths in his family. The last class includes those tenants who are in reduced circumstances, who have become deeply indebted, or who have mortgaged their holdings, as well as those who live from hand to mouth, such as Gonds or ryots without bullocks, who have the same status as day-labourers. This class accounts for 11 per cent. of the tenants and includes most of the real aboriginals, whose holdings are insufficient to provide a full livelihood and who eke out cultivation by collecting forest produce. They are distinctly poor, seldom cultivate more than 5 acres of land, and usually have no cattle of their own; while their land is continually liable to absorption in larger holdings. The Kols and Oraons, however, are as a class usually free from debt.

✓As regards the labouring classes, the earnings of a farm-servant Labourers. or *guti* are estimated at Rs. 63-12 per annum, viz., 3 *khandis* of paddy worth Rs. 3 a month or Rs. 36 per annum, 3 *purugs* of paddy per annum valued at Rs. 24, the perquisites of *pol* and *liakhia*, already explained, which are equivalent to about 3 *khandis* or Rs. 3, and one *dhoti* costing 12 annas. His income is, however, supplemented by the earnings of his womenfolk, as well as by the other allowances already mentioned. As regards the ordinary day-labourer, it was stated, as the result of the enquiries made at the time of the last settlement, that "the utmost that he can make by constant work is Rs. 2-8 per mensem. This income is largely added to by his women, who, besides being in constant demand at the seasons of transplanting, weeding and harvesting, are able to make good earnings in the *mahuā* season, and also to dry a stock of *mahuā* flowers for household use. At other seasons, in years of good harvest, they have practically continuous work at rice-husking. The income of the ordinary labourer's family, even at slack seasons, cannot be less than Rs. 3-8, which is sufficient for food, clothing, and the usual small comforts. The wage of a labourer is now, however,

3 annas a day, or about Rs. 5 a month. But any saving is impossible, and in a year of crop-failure the labouring class, supported for a few months by scanty harvest earnings and by the rice-husking of the women, falls into destitution by January. They get but little work to do in the cane harvest, but profit by the fall of the *mahuā* flowers in February and March."

The day-labourer's position has improved even in the short time which has elapsed since the above remarks were recorded, for he has been able to hold out for a rise of wages. His wages have now risen to 3 annas a day or Rs. 5 a month; and it is noticeable that, though recently (in 1907-08) there was a short crop and prices rose higher than ever, there was no actual destitution. Possibly one reason for the lack of destitution is that the high prices were due more to the demand from outside than to the failure of crops, so that those who had paddy were able to make large profits and employ labour during the hot weather.

Supply of labour. Regarding the supply of labour, Mr. Foley remarks as follows in his *Report on Labour in Bengal* (1906). "The only emigration from the district is to Assam, and this emigration is falling off; the figures for 1902-03 being 7,712, which fell to 1,354 and 853 in the two following years.* There is no temporary emigration from the district in the off season. The district is more prosperous than the districts further east, wages have risen, the cultivated area is increasing, and there is no reason why any one should emigrate from the district. The most numerous caste is that of the Gāndās, a caste of weavers, but who do a good deal of thieving. They are, however, classed high as excellent workers in the tea gardens. The District Officers would be glad if as many Gāndās as possible could be induced to emigrate, but it is difficult to move them. They are of good physique and might do for dock work if they were given lines; also for coal, if they were recruited in the right way, a small body of men first being induced to go, and then used as *sardār* to recruit others. The people are probably too jungly for mills. On the whole, Sambalpur does not appear a promising district from which to obtain labour, and considering the difficulties experienced in obtaining tea garden labour, it should, perhaps, be left alone by industries other than tea."

Emigra-
tion to
Assam.

The following account of emigration to the Assam tea gardens is quoted from an Appendix to the Report of the Assam Labour Enquiry Committee (1906). "The district contains a large number of Gāndās, who are low-caste weavers, and

* The number fell to 214 in 1905-06 and 64 in 1906-07.

day-labourers, and addicted to thieving. They are said to make good labourers on a tea garden. A difficulty has of late arisen in their recruitment, as professional thieves went up to Assam in order to get sent down as garden *sardārs*. Under cover of their *sardārs'* certificates they were able to escape molestation in committing house-breaking and petty thefts. The district authorities refuse countersignature of *sardārs'* certificates in the case of men who have been convicted of theft, and suspected characters are liable to supervision by the police. This has interfered with recruitment. The *Gāndās* are kept under strict control by the village headmen; until recently it was the practice for a roll-call to be taken in every village each night to see that the *Gāndās* were not out on the loose. Their lot is not a happy one, yet they have of late shown no indication to move from the district. Something might be done if a garden manager took down a number of *Gāndās* who had been some time in Assam, and through them offered to settle families who might be got to emigrate on rice land. The district authorities would be likely to help, as the *Gāndā* is not a man who would be missed. The local missionaries might also assist; they are keenly alive to the irksomeness of the watch and ward kept over the *Gāndās* in the villages. ✓

"The general impression is that very little emigration is to be expected from Sambalpur. The district has not suffered much from famine; there is a good deal of land available for cultivation both in British territory and the surrounding Native States; and a settlement of the district has just been completed, so that considerable extension of cultivation is likely to take place. Agricultural labour is in great demand and is done largely by the small ryot. The landless labourer is not much in evidence. There has been no movement from the district for outside work. In the present prosperous condition of the district there is very little chance of moving the stay-at-home inhabitant of Sambalpur, unless perhaps the *Gāndā* can be induced to escape from the bondage in which he is held in his native village."

CHAPTER IX.

OCCUPATIONS, MANUFACTURES AND TRADE.

OCCUPA-
TIONS.Agricultural
classes.

At the census of 1901 it was ascertained that no less than 77·7 per cent. of the population of the district, as then constituted,* were supported by agriculture. Practically all the castes have some connection or other with land, but approved members of the Hindu social system, such as Brāhmans, Kultās, Telis and Mālis, form a full half of the tenantry and hold much more than half the land. Of the others, at least half are semi-aboriginals, such as Savarās, or, as they are called locally, Saharās, who have settled down to steady agriculture; but most of the Binjhāls, Khonds (Kandhs), Gondās, Gāndās and Kisāns still exhibit aboriginal propensities. The number of field labourers, whether ordinary day-labourers or farm servants, is noticeably large, representing nearly a quarter of those supported by agriculture. The proportion of women among the former is also very marked, 60,000 women being returned as field-labourers as compared with 18,000 men—a fact which tends to shew that the main supply of day-labour is drawn from the ranks of the small cultivators.

Indus-
trial
classes.

The industrial classes are neither numerous nor important, with the exception of cloth-weavers, such as Koshtās, Bhuliās and Gāndās, and workers in metal, such as Lohārs, Kharurās, Kansāris and Sonārs. There is also a noticeable absence of certain classes of artisans common in other districts, such as shoe-makers, leather-workers and carpenters. Shoes are but little used, because the sandiness of the soil obviates the need of them, and also because religious sentiment is strong; the uses to which leather may be put by the agriculturist are consequently few. Practically, all hides are exported in a raw state, and the shoes worn by the well-to-do are imported. Carpentry, moreover, is not a village industry, as in other parts of India. Even in Sambalpur town there are only about a dozen carpenters: and they have little skill or training. In the villages a handy farm-labourer will do all the modest joinering that is needed for

* Statistics of the district as now constituted are not available.

house-building, for making sleeping-cots, ploughs, cane-mills, carts, etc.

Women constitute the majority not only of the field-labourers, but also of the retail merchants. It is the usual practice for the wives and relatives of farm-labourers and cultivators to buy up grain in small quantities, husk it at home, and sell it at the weekly village markets. At these markets grain, cloths, vegetables, sweets, firewood, salt, spices, tobacco, oil, trinkets and cattle are sold and bought; and almost all the trading, except in cattle, is done by women, young and old. The wholesale grain-dealers are local Brāhmans, Cutchi Muhammadans and Mārwaris, who buy grain and sell imported cotton thread, salt, tobacco, kerosene oil and cloth. The Cutchi trader is usually a temporary visitor, coming at harvest time to buy the cultivators' grain, and leaving the district in the spring. He is a pioneer in trade and penetrates to the remotest tracts, but though he is much in evidence at the village markets, he does not now command the bulk of the grain trade. His capital is usually small, and he is content with quick returns and small profits. Many Cutchis, however, have now settled permanently at Sambalpur, Jharsagurā, Lobelā and Padampur with their families, and like the Mārwaris carry on trade throughout the year. Most of these Cutchi settlers are contractors for the minor produce of the zamindari forests, e.g., *mahuā*, lac, myrobalans, etc. Mercantile classes.

The number of settled Mārwarī traders in Sambalpur town, Jharsagurā, and the larger villages, has also increased greatly of late years, their numbers rising from 1,223 to 2,867 between 1891 and 1901. They do business wholesale, buying from Brāhman traders or from their regular clients in the villages, and they avoid the cheating to which the Cutchi is subjected by giving out grain to be hulled by women who are in their regular employ.

The industries and manufactures of the district are not of any great importance, consisting of small hand industries carried on by village artisans in order to supply the simple needs of the villagers. With the exception of silk fabrics and stone work, few of the manufactured articles are exported, and most of the products merely supply the local demand. The following is a brief account of the principal industries. MANUFACTURES.

Tusser silk weaving has been the principal industry of Sambalpur for the last half century. Dr Shortt, who visited Silk weaving.*

* This account of the silk weaving industry has been compiled mainly from Mr. F. Dewar's *Monograph on the Silk Fabrics of the Central Provinces* (1901) and Mr. N. G. Mukerji's *Report on an Enquiry into the State of the Tassar Silk Industry in Bengal and the Central Provinces* (1905).

Sambalpur in 1855, found that tusser silk was manufactured to a great extent, the fabrics being used locally and also exported. In 1864 the Deputy Commissioner, Major Cumberlege, reported that five large villages or towns were occupied in weaving tusser, and in each, at the very lowest computation, 1,000 *thāns* or pieces were produced annually. The culture of the tusser silk worm was carried on in almost every jungle village, and at least 7½ million cocoons were produced. Only one-third of the cloth remained in the district, the rest being exported to Cuttack, Ganjām and Berhampore, and also to Raipur and Bilāspur; and it is clear that the industry was then in a flourishing condition. Again, in 1876 it was reported that Sambalpur was more advanced than other districts of the Central Provinces both in the quality of the cocoons exported, and in the workmanship of the cloth produced by its weavers. The export of manufactured tusser had apparently fallen off, but half of the cocoons produced were sent out to Ganjām, Cuttack, Raipur and Bilāspur.

Since that time the industry has declined still further, the local supply of tusser cocoons having decreased in quantity, degenerated in quality, and risen in price. The closer conservation of Government forests, the clearing of village forests, which were most convenient to the rearers, unfavourable seasons, and lack of care and capital on the part of the breeders are all said to have contributed to this result. For the rearing of tusser worms differs widely from the rearing of the ordinary silk-worm, in that the latter is a domesticated insect, whereas the tusser worm thrives best when in the jungle. Not being able to have access to forests, the rearers have not renewed their stock of cocoons from wild seed. Consequently, deterioration has set in, diseases, such as grasserie, have become common, and the cocoons do not contain as much silk as formerly. Even as long ago as 1892, the rearing of the tusser worm in Government and *mālguzāri* forests had practically ceased. It was then reported that the cocoon rearers had migrated to Feudatory States, where, although taxed, they were at least given strips of forest, and that the weavers drew their supplies of cocoons only from those States and from the zamindaris. This is exactly the condition of affairs which still exists, except that the weavers now have to go further afield for their supply, and obtain most of the cocoons from Singhbhum and the Baud State.

There is ample proof that the weavers would welcome a large increase in the supply. At present, they cannot keep their looms working on tusser alone for more than six months in the year.

Many have taken to agriculture as a secondary occupation for the slack season, and many have given up tusser weaving altogether. On the other hand, they find no difficulty in disposing of as much cloth as they can weave. The quantity, however, is not large, and it is significant of the decline of the industry that, some years ago, when an English firm established an agent in Sambalpur to buy up cocoons and tusser silk for export, the enterprise proved a failure. "In Sambalpur," wrote Mr. N. G. Mukerji in 1905, "the cocoon-rearing industry is almost dead. The worms nearly all die off from disease, and cocoon-rearing is no longer worth doing. The rearers use their home-grown cocoons for seed, and I attribute the bad result to this." Another reason for the decline in cocoon-rearing is probably that the people who cultivate the land do not cultivate tusser, and consequently cut down *āsan* (or *sāhāy*) trees when clearing for cultivation. That tree is quite as common in Sambalpur as in Singhbhum, but the Hos, who rear tusser cocoons in the latter district, leave a large number standing when they clear waste land, whereas in Sambalpur the Gāndās, who rear the tusser worm, are as a rule not cultivators, while the regular cultivating classes will not engage in cocoon-rearing.

Sericultural experiments have so far been unsuccessful. Some were made in 1869, but the conclusion drawn was that the complete domestication of the tusser-worm would cost so much as to leave no profit for the produce. In 1876 the Deputy Commissioner conducted still more careful experiments, but it was found that domestication could not pay in competition with ordinary native methods. In 1895 an attempt was made to introduce the *eri* worm into Sambalpur, but was also unsuccessful. Mr. Mazumdar, Head-Master of the Sambalpur High School, bred a quantity of *eri* worms with very good results, and the cocoons were distributed among the schools of the district in the hope that this domesticated worm might be adopted, but the people took no interest in this innovation. In 1904 Mr. N. G. Mukerji conducted an experiment in the Jhārgāhāti forest, in order to ascertain if silk-worms reared from wild seed would give better results than those grown from local home-grown seed by the indigenous rearers, but the experiment was a failure. Success, however, attended another experiment, instituted in the same year with the object of securing quick and even eclosion of moths from the large and hard wild cocoons, called *mugās*, by opening out the chrysalids from them.

The rearing of the tusser worm (locally called *kosā*) is carried on by Gāndās, chiefly on the *sāhāy* tree (*Terminalia tomentosa*).

Spinning and weaving are a monopoly of the Koshtās, the centres of the industry being Sambalpur, Remendā and Barpālī. At the census of 1901 there was a population of 1,867 Koshtās, but only 786 were returned as having any connection with the weaving industry. Many have given up weaving altogether, many now weave partly in cotton, and many cultivate land. Those who still follow the industry turn out good cloths and make fair profits. The fabrics are of good quality and are usually ornamented with tasteful borders and fringes. Mr. N. G. Mukerji states, in fact, that "the intrinsic merits of the Sambalpur tusser cloths (*dhotīs*, *sāris* and *thāns*) are very great. In quality the Sambalpur tusser excels Bengal tusser, and the skill of the Sambalpur spinners is greater than that of tusser-spinners of any other district. In lustre, in evenness of weaving, in neatness of design, the Barpālī tusser of Sambalpur is superior to all others, and it would be prized highly even in European markets. Barpālī being about 40 miles in the interior of the Sambalpur district, the merits of this tusser are not so widely known as they deserve to be." Mr. Mukerji is no less eulogistic of the methods of reeling practised, saying that "the quantity turned out by an expert reeler comes up almost to what is turned out in European factories, and the quality of the silk is very even."

The following is a more detailed account of the different kinds of cloths woven in the local looms. (1) *Mathās* or *dhotīs* and *pāchhudās* are pieces worked in one length from $7\frac{1}{2}$ to 8 yards long; a *dhotī* is usually 5 yards and a *pāchhudā* 3 yards long, but the whole is made in one piece and separated for use. The body of the cloth is undyed, but the borders are worked in yellow and crimson patterns; prices range from Re. 1 to Re. 1-12 per yard. *Dhotīs* and *pāchhudās* are also woven separately, and more cheaply, with only a narrow half-inch border. The breadths vary slightly from 37 to 42 inches, and the better cloths are usually the broader. (2) *Sāris* are sometimes dyed yellow in the body of the cloth, but this does not look so well as the natural colour. There is invariably a coloured end or fringe about a yard long, the prevailing colour of which is crimson. The crimson and yellow border is also invariable, but occasionally blue is effectively added to the pattern. The *sārī* is usually 7 or 8 yards long, and prices rise from Rs. 8 to Rs. 15 according to quality. Fine work can be got at Re. 1-8 per yard. (3) *Pagris* are only 2 feet broad and 8 yards long. They are undyed, except for a plain narrow crimson border; and their price varies from 8 annas to Re. 1 per yard. (4) Plain cloth is made with a 36-inch

breadth, in any length required, and is very durable. It ranges in quality from 4 to 8 ply, and the better kind is suitable for European wear. The price ranges from 12 annas to Re. 1-8 per yard. (5) Checked cloth is nothing else than plain cloth checked out with narrow crimson or black lines. (6) Twill is not a common article, but can be made to order. It is undyed, is very heavy and durable, but does not keep the gloss of thinner cloth. The price is Rs. 2 or Rs. 2-4 per yard. Borders, usually not more than one inch broad, are introduced in the warp of cotton cloths. The tusser threads are usually yellow. This looks effective when the colour of the cotton cloth is red or green. A *sāri* so ornamented costs Rs. 2-12.

The present state of the industry is described as follows in Mr. F. Dewar's *Monograph on the Silk Fabrics of the Central Provinces*. "The western *tahsil* is the more important. Three-fourths of the tusser woven there is bought up and exported to Ganjam. The local demand is frequently left unsatisfied. The weavers could make a far larger output if they had more raw material; and if the supply were regular and plentiful, the number of tusser weavers could indefinitely increase. In the eastern *tahsil*, which has railway communication, there are fewer weavers, and they are still worse off. The outturn of the *tahsil* in cocoons is not large, and the bulk of it is at once exported to Raipur, which has no cultivation of its own, and Bilāspur, where the weaving industry is advancing without being accompanied by an advance in tusser cultivation. This competition tells on the price of cocoons, and the local variations are great. One Koshtā, an agricultural labourer, told me—"It is only the richer people in our caste who weave tusser. My father used to do it, because in those days cocoons were cheap."

"A Koshtā must buy up in November or December enough cocoons to last him for a year. That will be probably about 40,000 cocoons, if his work is to be regular. At the former rates this would mean an expenditure of from Rs. 80 to Rs. 120. But, as prices now run from Rs. 5 to Rs. 7 per thousand, his stock would cost from Rs. 200 to Rs. 280. Few weavers can command this amount of money, and the consequence is that at the proper season they buy only so far as their money will go, and then after disposing of cloths, buy cocoons again, if they are lucky enough to find any rearer with a stock left in hand. In any case the second buying is the more expensive. . . . In quite ordinary years the Koshtā's supply of cocoons is apt to give out prematurely. He frequently carries on agriculture as a secondary occupation. If he has no land, he fills up his slack

season by weaving cotton, and if possible, preserves a slender stock of tusser thread to be used in weaving narrow silk borders to his cotton cloths."

Cotton
weaving.

Cotton cloth of a coarse texture, but of considerable taste in colour and variety of pattern, is also woven in large quantities, imported thread being used almost exclusively. It is generally worn by natives of the district in preference to mill-woven cloth. Fine cotton cloths with coloured borders are woven by Bhulias, a caste numbering 12,241 in 1901. The industry does not appear to have been affected by the competition of imported machine-made cloths, for practically all the Bhuliā families still weave, and many of them also have land. There are probably two reasons for this survival of the local industry. The Bhuliā works for the well-to-do, and though his customers appreciate the lower price and lighter texture of the machine-made stuff, they buy the better and dearer article because it wears much longer, keeps its colour, and is in the end cheaper. The second reason is that imported cloths are not usually of the correct width or length for women's wear, and their borders cannot compare in appearance with the work of the Bhuliā.

Coarse cotton cloths of the cheapest qualities are woven by the Gāndās; but they suffer greatly from the competition of the machine-loom, because their customers belong to the poorer classes, who buy what is cheapest, whether it wears well or not. Many Gāndās still own looms, though they are not able to keep them regularly at work. Imported thread from the Nāgpur and Wardha mills is generally used. The principal centres of the cotton weaving industry are reported to be Sambalpur, Barpālī, Remendā, Rāmpelā, Rājpur, Bijepur, Talpatīā, Dhāmā, Bheran, Katapālī (4 miles from Bargarh), and Chichendrā near Remendā.

Iron work.

Iron ores are found in the hilly country on the borders of the district, particularly in the Borāsāmbār, Kolābirā, Lairā, Pahārsirgīrā, and Rāmpur zamīndāris, and in the Bārapahār hills. Some of them are of good quality, those in the Sambalpur zamīndāris, especially in Lairā, being said to be superior to those of the Bargarh zamīndāris. They are worked by indigenous methods only, and those methods are very primitive. The following description given over 50 years ago by Dr. Shortt still holds good, no change of any kind having been effected. "In the process for obtaining iron from the stone, no flux is used; it is smelted by means of charcoal. The furnace stands about 4 feet in height, and the width inside is 1 foot. Three men are employed at each furnace, two to work the bellows and one as feeder. The